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ABSTRACT

Educational issues across the different member countries of the Organization for Economic Cooperation and Development (OECD) are compared in this report. The OECD is made up of 26 developed countries. The indicators used in this analysis cover the years 1985 to 1991, a 7-year time series to study trends in policy. The indicators in this report provide data on how close the United States is to meeting its own educational goals defined in the National Education Goals of 1990, as well as how the country compares to other nations. Highlighted in the report are the basic components of education, including enrollment, expenditures, and outcomes. By examining economic and demographic characteristics, the education system of each country is placed in its proper context. The 12 indicators are grouped into 5 sections: (1) the social and economic context of education; (2) participation in education; (3) human and financial resources; (4) system outcomes; and (5) labor market outcomes. Most countries showed increases in educational participation, enrollment in tertiary education, expenditures on public education, expenditures per student, and first degree graduation rates. However, the percentage of graduate degrees awarded in most OECD countries in the sciences dropped overall between 1985 and 1991. An attachment contains supplemental notes and tables. (Contains 12 tables, 4 supplemental tables, and 16 figures.) (SLD)

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International Education Indicators: A Time Series Perspective

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International Education Indicators:

A Time Series Perspective

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INTRODUCTION

INTRODUCTION

International Education Indicators: A Time Series Perspective compares, over time, educational issues across the different Organization for Economic Co-operation and Development (OECD) countries. The OECD is made up of 26 developed countries dedicated to promoting economic growth and development around the world. The indicators used in this comparative analysis cover the years 1985 to 1991, a seven-year time series to study trends in policy. Those years were a period of change for many countries.

In the United States, the seven years represent a span marked by intense education reform. *A Nation at Risk*, which many now recognize as the "trigger" for change, highlighted the state of American education and its essential role in the nation's prosperity. *A Time for Results* was subsequently published in 1986, supporting findings in *A Nation at Risk*, and giving specific recommendations for the improvement of America's educational system.

In 1989, the nation's governors established six National Education Goals, which highlighted improvements that should be made by the year 2000. These publications have focused on the goals relating to education outcomes. For example, goal 2 emphasizes the importance of completing high school, goal 3 stresses achievement in all subjects, and goal 5 sets the stage for the United States to be first in the world in mathematics and science.

The indicators in this report provide data on how close the United States is to meeting its goals, as well as how the country compares to other countries. These indicators also should aid policy makers in determining what changes have been made in the education system in the United States during this period of intense reform.

In addition, we compare changes in the United States during this time period to changes occurring in other countries, as other countries were engaging in their own reform movements. This report allows countries, themselves, to identify similarities and differences among themselves, and to compare trends in their own country to those occurring in other countries.

Highlighted in this publication are the basic components of education, including enrollment, expenditures, and outcomes; and, by initially examining demographic and economic characteristics, the education system of each country is placed in appropriate context. Readers are thus able to review both substantive indicators and the context within which they should be examined. That context, itself, includes an understanding of the education systems and social structures of different countries, factors which have a bearing on a country's relative position on a given education indicator. Provided with such background, the reader can better understand, and make inferences about, the meaning of the indicators for each country, its students, and its people. Moreover, by comparing trends in the social or economic variables to trends in the education system, the reader can more

clearly see the relationship between background variables and education policies.

Other Related Projects

In response to an increased demand for information on education, the Centre for Educational Research and Innovation (CERI) at the OECD initiated the International Education Indicators Project (INES). Several publications have been released recently which use the data collected under INES to explore the differences in the education systems of different countries. The first product of this effort, *Education at a Glance*, was published in 1992, and was a result of a collective effort to improve the gathering and reporting of international information on education in the OECD countries. Early in 1995, the third edition of *Education at a Glance* was published. It contains 49 international indicators covering the 1991-1992 school year, and was developed in cooperation with the new OECD Unit for Education Statistics and Indicators. The three major content areas of this publication are: Contexts of Education; Costs, Resources and School Processes; and Results of Education. Overall, the publication provides a comprehensive view of the countries, as it looks at such indicators as "Public confidence in the schools," "Teacher education," "Hours of instruction," and "Progress in reading achievement."

Another publication released recently was the second edition of *Education in States and Nations: 1992*, produced by the National Center for Education Statistics. The first edition of this publication was released in 1993, and reported data for 1988. In this publication, indicators are seen as international benchmarks for assessing the condition of education in individual states and in the United States as a whole. Country-level and state-level data are arrayed in separate tables and in a chart for each indicator in order to facilitate comparisons.

Education in States and Nations includes 37 indicators divided into six sections: Background; Participation; Processes and Institutions; Achievement and Attainment; Labor Market Outcomes; and Finance. Indicators vary from social issues, such as "Births to teen mothers," to school demographics, such as "Class size," and from equity issues, such as "Educational equity for women," to financial issues, such as "Teacher salaries."

Finally, the most recent NCES publication to use INES data is *Education Indicators: An International Perspective*. This publication, produced in 1996, reports data from 1991-1992, and provides a clear, comprehensive view of the education systems of the United States and its economic competitors. This publication was written from the viewpoint of the United States, (i.e., the United States was used as a reference to which all other countries were compared). *Education Indicators: An International Perspective* provided American policy makers, business people, researchers, and other concerned citizens with the data and contextual information necessary to make informed judgements about successes and shortcomings of the U.S. education system. Its indicators are, therefore, geared to the interests of a U.S. audience.

The publication, itself, is divided into six sections: Participation and Student Flows; Achievement and Attainment; Education and Labor Market Decisions; Educational Institutions; Contextual Factors; and Societal

Support. Some indicators unique to this publication include "Locus and mode of decision-making in education," "Computer use," and "Home and school language."

While these three publications include more indicators and give a more thorough view of the education systems in the different countries than this publication does, data are only provided for the most recent year. *International Education Indicators: A Time Series Perspective* provides data for all the years for which data were collected: 1985-1991, or 1992.

Data Limitations

The numbers shown in this publication were tabulated from *Education at a Glance* software prepared by the INES Project on international indicators. These data have several limitations that need to be mentioned.

The data were originally collected for individual years, with no special consideration given to building a longitudinal trend series. The data were then revised in 1993, in order to build a coherent data series that could, in fact, be used for longitudinal comparisons. These revised data are reported in this publication. Several problems occurred in the revision, however, that raise questions about the strict comparability of the data as a time series.

First, INES definitions are refined each year to improve the comparability of indicators across countries. Therefore, a definition used in 1991 may be different from one used in 1985. In addition, methods of collecting data and the wording of questions have also changed over the years, again raising questions of data comparability over time.

While these problems affect some indicators more than others, this publication selected indicators believed to have only minimal data problems. In cases where the comparability of the data became problematic, the affected data were excluded from the tables. For this and other reasons, many indicators are missing data for one or more countries for one or more years. In such cases, averages were calculated by using only the countries that reported data for each year. Thus, the averages may not provide a good indicator of the overall average for any given year.

In the future, a new database will highlight the discrepancies for each country for each year. Efforts will then be made to have each country resolve the problems with its data. Newly revised data will be integrated back into the original INES database, which should allow for more reliable time series comparisons among the countries. Until then, the data contained here are the best available.

Objectives and Organization

This publication has produced indicators that each give a broad picture of an education issue, allowing for comparisons to be made both among countries and over time. The indicators selected for this publication were chosen primarily because of their policy relevance and available data. Several issues were selected because of their relevance to many countries, and because they show changes occurring over time as a result of policy reforms. We then explored the availability of data for all the countries over the seven-year period.

For the most part, indicators were chosen for inclusion in this publication if they provided

data for a majority of the OECD countries over most of the years, and if the data were deemed *not* to contain severe comparability problems. Only 12 primary indicators are therefore included, along with three indicators showing bivariate relationships between different sets of data. While the number of indicators is small, the indicators encompass a wide range of education issues, and they provide a comprehensive view of the differences among countries and the changes over time.

The twelve indicators presented here are divided into five sections:

- **The Social and Economic Context of Education**
- **Participation in Education**
- **Human and Financial Resources**
- **System Outcomes**
- **Labor Market Outcomes**

The Social and Economic Context of Education provides some descriptive information to understand the context within which the education system operates. Participation rates, for instance, indicate the availability and priority placed on education. **Participation in Education** examines enrollment rates across the countries at the various education levels, and shows where and how enrollment rates have fluctuated over time. **Human and Financial Resources** provides information on the relative expenditures for education, and on the percentage of resources each country has been willing or able to contribute to its education system over time.

System Outcomes reports the percentage of the population that is awarded degrees and the proportion of those degrees that are in science, providing an indication of the skill level of the various countries in some specific areas of study. Finally, **Labor Market Outcomes** demonstrates the strength of the relationship between education and participation in the labor force in each of the countries, over time. Because returns in the labor market are a major goal of investment in education in all countries, this section indicates each country's success relative to that goal.

Within any given section, each indicator contains findings summarized in textual, tabular, and graphical formats. With a few exceptions, each indicator includes a table with four panels of time-series data, and highlights areas of the data by depicting them graphically. Major points are summarized in a series of bullets, prefaced by an explanation of the relevance of the indicator.

Several indicators include explanations of the technical points of the analysis, while discrepancies in the data or substantive differences among countries (e.g., different definitions of terms) are discussed in the supplemental notes and tables section.

Countries displayed in the graphics were usually selected to show the range of values on a particular indicator. Countries in all bar charts were rank-ordered from highest to lowest, based upon the most recent year of data.

In the text, trends in the United States are compared largely to trends in other "Group of Seven" (G–7) countries, essentially because those countries are recognized as the

world's major industrialized economies. The G–7 countries are the United States, Canada, Japan, France, Germany, Italy, and the United Kingdom. These countries are similar to one another in terms of economic development, and are those with which the United States competes most often in world commerce.

Three chapters follow this first introductory chapter. Chapter 2 uses several social and economic variables to provide a context for the comparisons that follow. Chapter 3 includes 12 indicators, each providing data on one facet of education.

The goal of Chapter 3 is to provide a general overview of the education systems in each of the 24 participating OECD countries, from 1985 to 1991, and to make comparisons both among countries and over time. For example, the ratios indicator depicts the average number of students enrolled for each teacher in the education system; and it provides data for each of the 24 countries over the seven-year period (which show that there are substantial differences in the student-teacher ratios across the countries, and that the ratios have, for the most part, either decreased or remained stable over the years).

The three indicators included in Chapter 4 explore a bivariate relationship between two of the simple indicators in Chapter 3. In essence, the chapter explores several hypotheses about the relationships between different educational factors. For example, the Youth and Population indicator was compared to the Student-teacher Ratios indicator, the point being to determine how an increase in the proportion of school-age children in the population is related to student-teacher ratios. One hypothesis would be that when the population "becomes younger," student-teacher ratios tend to increase. In fact, the percentage change in the student-teacher ratio tends to increase or decrease *in proportion* to the percentage change in the number of 5- to 13-year-olds in the population, with some exceptions in countries such as Spain and the United Kingdom.

Major Findings

Chapter 3 contains twelve indicators divided into five sections. The first section, **"The Social and Economic Context of Education,"** contains a set of background variables and one indicator, "Youth and Population." The purpose of the background variables is to show how the countries compare to one another on demographic characteristics, economic welfare, and employment statistics. The demographic characteristics list the total area of the countries and indicate the population density, showing Canada and the United States to have the largest land mass and the Netherlands, Japan, and Belgium to have the most residents per square kilometer. Out of the 24 OECD countries with data available, the United States and Canada rank 17th and 22nd, respectively, in terms of population density.

The Gross Domestic Product (GDP) per capita is a measure of a country's level of productivity, as related to the size of the population. The GDP per capita is reported using purchasing power parity (PPP) as the conversion factor which equates this measure across the different countries. Purchasing power parity is the rate of currency conversions that eliminates differences in price levels among countries by equalizing

the value of money in terms of the goods or services that money can buy. (For a more complete explanation of PPP, please see the supplemental notes.) The data show the United States, Japan, Switzerland, the former West Germany, and Luxembourg to have the highest GDP per capita, while Greece and Turkey have the lowest GDP per capita. There were also substantial differences among countries in the real rate of growth in GDP per capita between 1985 and 1991.

While the cyclical nature of unemployment makes it difficult to pinpoint, an analysis of unemployment data highlights Spain and Ireland as the countries that consistently report the highest levels of unemployment. From 1985 to 1992, between 16 and 21 percent of the labor force in Spain and between 14 and 18 percent of the labor force in Ireland were unemployed. Japan, Austria, Luxembourg, and Switzerland consistently report unemployment rates of less than 4 percent. While the unemployment rate in the United States dipped down to about 5 percent in the late 1980s, in 1985 and in 1992, unemployment hovered at about 7 percent.

Other measures of employment include the percent of unemployed youth, and the distribution of employment across different industrial sectors. Spain and Italy tend to have higher rates of youth unemployment, while very few youth are unemployed in Luxembourg and Japan. While Turkey shows the largest portion of its employment in the agricultural sector, all other OECD countries report the majority of their employment in the services sector. In almost all the countries, between one-fifth and one-third of the jobs are found in the industry sector.

These data provide a clear picture of the social and economic background of the different countries; and they help to provide a framework for evaluating education data. The first indicator, "Youth and Population," provides information on the population size, and illustrates what proportion of the population is made up of the younger age groups. Looking at the percentage of the population age 5 to 24 years gives an estimate of the potential demands on the education system, as well as a prediction of the relative size of the labor force in the years to come.

The second section, **"Participation in Education,"** includes four indicators on enrollment. Indicator 2 "Enrollment Rates in Formal Education," shows, by age group, what percentage of the population is enrolled in school.

Examining differences in enrollment rates across countries and over time may highlight differences in the *value* a country places on education; and it may illustrate the dependency of the economy on a trained workforce. In most countries, at least 65 percent of the population age 5 to 24 was enrolled in formal education. For the most part, the percentage enrolled increased from 1985 to 1991; and in 1991, the numbers ranged from 47 percent in Turkey to 75 percent in France.

The next indicator, "Private School Enrollment," describes the availability of alternatives to public education in the different countries. Changes in private schools' share of enrollment can result from changes in any one of a number of factors, including tuition rates, family income, the relative value placed on education, the importance of religion in education,

satisfaction with the public schools, and the simple availability of public schools. On average, less than 20 percent of the population in the OECD countries attends private school. Of course, this percentage varies widely among countries and between education levels.

Almost 100 percent of students in Ireland attend private schools at the primary level, while less than 1 percent of students in the former West Germany attend private schools at the tertiary (postsecondary) level. For the most part, and in the majority of the countries, private schools' share of enrollment remains relatively stable over time.

The indicator entitled "Enrollment Rates in Upper Secondary Education" provides an indication of what percentage of the population is enrolled at this level. The participation rates in upper secondary programs may be an indication of the value placed on on-going education, the economic need for skilled workers, and the availability of diverse institutions to meet all student needs. Overall, enrollment rates in upper secondary education have increased from 1985 to 1991, at all ages between 16 and 19, indicating that students are staying in school longer.

The last indicator in this section is "Enrollment Rates in Tertiary Education." Tertiary education includes both public and private university and non-university institutions, and a country's enrollment rates are dependent upon a number of factors, including the value a country places on higher education, the need for more advanced skills in the workforce, the diversity of programs offered at the tertiary level, and the accessibility of tertiary education.

Enrollment rates have either remained relatively stable across time or increased slightly. The United States, for instance, continues to demonstrate the highest rate of enrollment in tertiary education at ages 18 to 21, of all OECD countries with data available, a fact possibly due to the value this country places on education, as well as the availability of diverse types of higher education, including community colleges and four-year universities.

The third section, **"Human and Financial Resources,"** contains three indicators examining human resources in terms of the relative number of teachers and financial resources, and does so in terms of expenditures on education. The first indicator in this section, "Student-teacher Ratios," compares the number of students enrolled in each level to the number of teachers working at that level. For students, a lower student-teacher ratio could mean easier availability of a teacher's guidance, while a higher ratio could mean less individualized attention. On average, student-teacher ratios have dropped from 1985 to 1991. While there is much variation among countries, most countries show a smaller student-teacher ratio at the secondary level than at the primary level.

The first expenditures indicator is "Public Expenditures on Education as a Percentage of GDP." The percentage of the GDP spent on education from public sources may reflect the value a country places on education, as well as differences in income within a country. However, it is not a measure of total expenditures on education, since

expenditures from private sources are not included.

Overall, countries spend between 4 and 7 percent of their GDP on public expenditures for education. Several countries have shown an increase in the percentage spent on education since 1985, while others have shown a decrease. However, the changes vary considerably across countries and among education levels.

The other expenditure indicator is "Expenditures per Student from Public Sources," which measures how much public financial resources a country devotes to educating the individual student, on average. As an indicator, it reflects not only the wealth of a country, but how much emphasis a country places on education, as well as the public cost of educating its students. In most OECD countries for which data are available, per-student expenditures increase by education level.

Most countries also reported an increase in per-student expenditures in real terms between 1985 and 1991. Once again, per-student expenditures varied greatly among the different countries and within the different levels. For example, Ireland spent approximately $1,500 per student at the primary level, while Switzerland spent over $14,500 per student at the tertiary level.

The fourth section, **"System Outcomes,"** contains three indicators: the percentage of the population that receives degrees; and the proportion of these degrees that are in science. The first indicator, "First University Degree Graduation Ratios," compares the number of students earning their first college degree to the number of students who are of the typical age of college graduation. The ratio indicates what percent of the population at a given age had the opportunity and the desire to receive an advanced education, and it indirectly measures the skills available to the various national economies.

Overall, between 1985 and 1991, first degree graduation ratios increased, with the largest increases in percentage points found in Norway and Canada. In addition, for the average of all OECD countries, first degree ratios of women have grown at a faster rate, and they have surpassed those of men.

The other two indicators in this section look at the "Percent of University First Degrees Awarded That Are in Science," and the "Percent of Graduate Degrees Awarded That Are in Science." Both indicators demonstrate the value placed on highly qualified labor in the sciences, and may provide an indirect measure of the competitiveness of each country in the field of science.

Overall, more degrees are being awarded in the natural sciences and in engineering than in mathematics and the computer sciences. From 1985 to 1991, there was little fluctuation in the percent of first degrees awarded that are in science (for the average of all OECD countries). However, at the graduate level, there was a substantial decrease in the percent of natural science degrees awarded. The United States saw a fairly substantial decrease in the percent of science degrees awarded at the bachelor's level, as well as in the percent of natural science degrees awarded at the graduate level; however, the percent of graduate degrees awarded in mathematics and computer science, and in engineering, increased slightly.

The final section, "Labor Market Outcomes," has only one indicator: "Labor Force Participation and Educational Attainment." Labor force participation rates indicate the degree to which a population has the ability and the opportunity to seek employment. Variation in labor force participation by levels of educational attainment may reflect not only the impact of formal education on employment opportunities, but the economic returns to human capital investment.

Overall, for all countries across time, the labor force participation rate is higher for those with a university education than for those with an upper-secondary education. Between 1989 and 1992, those rates increased in some countries and decreased in others, but the OECD average remained constant.

Chapter 4 contains three indicators that examine more complex relationships between the variables — based on correlation coefficients that were tested for significance. "Participation in Formal Education and Expenditures per Student from Public Sources," looks at the association between a financial resource indicator and an enrollment indicator. The hypothesis tested here is that there is a direct relationship between changes in expenditures per student from public funds and participation rates at the upper secondary level. This relationship was found to be significant, meaning the hypothesis was supported by the data. For example, for countries that spent $5,000 or more per student at the secondary level in 1991, the participation rate exceeded 90 percent. In other countries with much lower expenditures per student, such as Portugal and Turkey, participation rates were also lower. The second indicator, "The Relationship between Changes in the Population Age 5 to 13 and Changes in the Student-Teacher Ratios," examines the association between an indicator from the section on the context of education and one on human resources.

This indicator tested the hypothesis that as the school-age cohort increases or decreases, the teacher population remains static, causing the student-teacher ratios to increase or decrease. This theory is not supported by the data. While some individual countries showed a positive relationship between changes in the student population and changes in the student-teacher ratio, the countries as a whole showed no relationship between the two variables, indicating that there are other forces determining the ratio between the number of students and the number of teachers.

The last indicator, "First University Degree Graduation Ratios and Public Expenditures on Tertiary Education as a Percent of GDP," again examines the same measure of financial resources distributed to education. However, this time it compares that measure to a system outcome. The hypothesis tested here is that changes in public expenditures on tertiary education as a percent of GDP are related to changes in the first degree graduation ratio. Once again, this relationship was found to be significant.

Using Norway as an example, we see that Norway's first degree graduation ratio increased from 19 percent in 1985 to 31 percent in 1991, correlating with its increase in public expenditures as a percent of GDP. For the most part, graduation ratios increased between 1985 and 1991, regardless of increases in expenditures although the countries with the largest increases in public

expenditures also showed the largest increases in first degree graduation ratios.

Together, these 15 indicators provide "snapshots" of the differences in the education systems of the different countries, as well as indicate the trends over time in education in the different countries.

HIGHLIGHTS

Most countries showed increases in participation for the 5- to 24-year-old cohort between 1985 and 1991. While the United States' enrollment rate for this cohort increased 4 percentage points, the largest increases occurred in New Zealand, Canada, and the United Kingdom. Much of this increase can be attributed to the increase in participation of 18- to 24-year-olds in tertiary education. **(Indicator 2)**

Between 1985 and 1991, enrollment rates in tertiary education increased across all age groups for nearly all the OECD countries with data available. Some of the largest gains occurred for 18- to 21-year-olds. The United States consistently reported the highest enrollment for 18- to 21-year-olds in tertiary education with enrollment rates between 33 and 38 percent. **(Indicator 5)**

Student-teacher ratios at both the primary and secondary levels declined between 1985 and 1991 in the majority of countries with available data. Some of the largest declines were seen in Spain, Italy and the United States. **(Indicator 6)**

Between 1985 and 1991, public expenditures on education as a percentage of GDP increased in several countries, including Norway, Portugal, Spain, and the United States. Australia showed a large decrease on this indicator between 1985 and 1989, and Belgium showed a similar decrease between 1985 and 1990. In most OECD countries, public expenditures on education as a percentage of GDP were higher at the secondary level than at either the primary level or the tertiary level. **(Indicator 7)**

In most OECD countries, expenditures per student (in constant 1991 U.S. dollars) increased between 1985 and 1991 at all education levels. However, expenditures per student decreased in Belgium at the primary and secondary levels, in Sweden at the pre-primary level, and in Denmark at the tertiary level. **(Indicator 8)**

The United States, Switzerland, and Sweden have the highest per-student expenditures at the secondary level and their participation rates are also among the highest. **(Indicator 13)**

Between 1985 and 1991, first degree graduation ratios increased in most OECD countries. The largest increases were found in Norway and Canada. Canada's increase of 12.1 percentage points was large enough to make it the country with the highest first degree graduation ratio of all OECD countries with data available in 1991. **(Indicator 9)**

Between 1985 and 1991, almost all the OECD countries with data available increased public expenditures on tertiary education as a percentage of GDP, the only exception being the former West Germany. During the same period, the majority of countries also experienced an increase in the first degree graduation ratios; the exceptions were the former West Germany and Sweden. **(Indicator 15)**

The percentage of graduate degrees awarded by universities in science dropped overall between 1985 and 1991. Countries experiencing large drops in the percentage of graduate degrees awarded in science included Finland, Turkey, Spain, Norway, and Austria. However, several countries, including the former West Germany, Japan, and Denmark, showed increases in the percentage of graduate degrees awarded in science. **(Indicator 11)**

CONTEXTUAL CHARACTERISTICS

CONTEXTUAL CHARACTERISTICS

This chapter shows how the OECD countries compare to one another on demographic characteristics, economic welfare, and employment, and provides a picture of the social and economic characteristics of the different countries. These background variables provide a context for understanding countries' education systems.

A country's land area and population can have a large influence on the organization of its education system. Countries with large areas may face greater challenges in providing educational services, since resources must be spread over a wider geographic area. Countries with high population densities may face a greater demand for education services, but may be able to support a wider range of specialized education and training opportunities more efficiently.

Gross Domestic Product per capita is a measure of a country's level of productivity, as related to the size of the population. GDP per capita is measured in constant (1991) dollars to equate the measure across years. Purchasing power parity, the rate of currency conversion which adjusts for differences in the cost of living across countries, is used to equate the measure across the different countries. GDP per capita provides an indication of the potential resources available in a country to support its education system.

The unemployment rate shows the percentage of the labor force that is currently without work and seeking employment, and is an important indicator of the overall status of a country's economy. In many industrialized countries, employment is related to education, as more highly educated people are more likely to have the skills necessary to obtain employment, and are thus more likely to be employed.

Unemployment rates are cyclical and, thus, may differ if calculated at different points in time. More stable measures of employment include the percentage of youth in the labor force and the distribution of employment across the different industrial sectors. The percentage of youth aged 15 to 24 in the labor force and the percentage of youth who are unemployed are both linked to factors influencing the decision to stay in school or enter the workforce. The different industrial sectors provide an indication of the economic development of a country. A more industrialized country will have most of its employment in the industry and service sectors while a less industrialized country will have more employment in the agricultural sector. Different economic structures require different human resources and thus emphasize different skills in their education systems.

- Canada, the United States, and Australia have the largest land masses, while the Netherlands, Japan, and Belgium have the most residents per square kilometer. Of the 24 OECD countries with data available, the United States and Canada rank 17th and 22nd, respectively, in population density.

- The United States consistently reported the highest GDP per capita between 1985 and 1992, and GDP per capita grew, in real terms, by 6.2 percent over that time period. While no other country had a higher GDP per capita than the United States, several countries showed a faster rate of growth. For example, in real terms, GDP per capita rose in Portugal, Ireland, and Japan by 44, 40 and 28 percent, respectively and by 20 percent in the former West Germany and Italy.

- Spain and Ireland consistently reported the highest levels of unemployment — at or above 14 percent during the period 1985 to 1992. Japan and Austria consistently reported unemployment rates of less than 4 percent.

- In 1992, less than 40 percent of youth in France, Greece, and Belgium participated in the labor force while over 70 percent participated in the United Kingdom. Spain, Italy, and Greece tended to have higher rates of youth unemployment than other OECD countries, while very few youth were unemployed in Luxembourg or Japan. The United States had a higher youth labor force participation rate and a lower youth unemployment rate than the majority of the OECD countries with available data.

- In 1992, all OECD countries reported the majority of their employment in the services sector, except for Turkey which showed the agriculture sector as having the highest employment. In all the countries with data available, between one-fifth and one-third of the jobs were found in the industry sector.

Contextual characteristics of OECD countries

Total area (in 1000 sq. km.)	Population density: 1992 (per sq. km.)	Country	Gross domestic product per capita at constant (1991) prices based on PPPs[1]								Real growth in GDP per capita (%)
			1985	1986	1987	1988	1989	1990	1991	1992	1985-1992
7686.8	2.3	Australia	16,264	16,602	17,091	17,587	17,476	16,698	16,365	16,152	-0.7
83.9	95.2	Austria	15,538	15,797	15,962	16,516	17,013	17,323	17,342	18,197	17.1
30.5	328.2	Belgium	15,114	15,404	15,621	16,254	16,721	17,021	17,160	18,337	21.3
9976.1	2.9	Canada	18,048	18,559	18,982	19,611	19,638	19,074	18,395	18,112	0.4
43.1	120.4	Denmark	16,447	17,123	17,069	17,207	17,222	17,245	17,439	17,712	7.7
338.0	15.0	Finland	14,783	15,097	15,449	15,900	16,533	16,221	14,816	13,900	-6.0
549.0	105.0	France	16,289	16,700	16,895	17,469	17,953	18,078	18,156	18,628	14.4
248.7	260.8	West Germany (former)	17,125	17,619	17,772	18,269	18,666	19,142	19,681	20,574	20.1
132.0	78.6	Greece	7,388	7,529	7,442	7,734	7,948	7,737	7,764	8,306	12.4
103.0	2.5	Iceland	16,583	17,656	19,027	18,906	18,810	18,719	18,695	18,983	14.5
70.3	50.6	Ireland	9,280	9,292	9,675	10,069	10,840	11,678	11,966	12,988	40.0
301.2	189.5	Italy	14,876	15,401	15,806	16,396	16,803	16,959	17,167	17,775	19.5
377.8	330.0	Japan	15,328	15,727	16,212	17,095	17,753	18,336	18,951	19,543	27.5
2.6	146.2	Luxembourg	18,803	19,456	19,545	20,338	20,929	20,762	20,857	21,938	16.7
40.8	375.0	Netherlands	15,009	15,427	15,434	15,689	16,257	16,621	16,427	17,018	13.4
268.7	12.9	New Zealand	14,181	14,544	14,549	14,346	14,460	14,083	13,643	14,047	-0.9
324.2	13.3	Norway	16,032	16,736	16,913	16,690	16,648	16,680	16,765	18,009	12.3
92.4	107.0	Portugal	6,789	7,111	7,461	7,788	8,277	8,656	9,116	9,777	44.0
504.8	77.4	Spain	10,124	10,465	10,988	11,493	11,963	12,249	12,705	12,891	27.3
450.0	19.4	Sweden	16,523	16,961	17,351	17,609	17,832	17,720	16,839	16,638	0.7
41.3	168.0	Switzerland	20,208	20,782	20,953	21,327	22,141	22,179	21,758	22,327	10.5
780.6	76.2	Turkey	4,210	4,447	4,743	4,720	4,602	4,856	4,811	4,872	15.7
244.8	236.2	United Kingdom	14,505	15,193	15,792	16,491	16,730	16,557	15,580	16,333	12.6
9372.6	27.5	United States	21,243	21,748	22,098	22,681	22,971	22,890	22,385	22,549	6.2

[1]PPP stands for purchasing power parity—an adjustment factor. Refer to the supplementary notes for a description of this adjustment factor.

SOURCE: Organization for Economic Cooperation and Development (OECD) *Education Statistics, 1985–1992* and *OECD in Figures, 1995.*

Contextual characteristics of OECD countries (continued)

Youth[1]	Youth unemployment: 1992[1,2]			Unemployment								Employment by sector: 1992[3]		
% in Labor Force: 1992	Men	Women	Country	1985	1986	1987	1988	1989	1990	1991	1992	Agriculture	Industry	Services
68.2	20.2	16.8	Australia	8.0	8.0	8.0	7.1	6.1	6.9	9.5	10.7	5.3	23.8	70.8
62.2	—	—	Austria	3.6	3.1	3.8	3.6	3.1	3.2	3.5	3.6	6.9	35.0	58.1
37.4	17.4	19.7	Belgium	12.3	11.6	11.3	10.3	9.3	8.7	9.3	10.3	2.6	27.7	69.7
65.1	20.2	15.1	Canada	10.4	9.5	8.8	7.7	7.5	8.1	10.2	11.2	4.4	22.2	73.4
68.8	14.3	14.6	Denmark	7.3	5.5	5.4	6.5	8.1	8.3	9.1	9.0	5.2	26.3	68.5
49.5	15.4	11.3	Finland	5.0	5.3	5.0	4.5	3.4	3.4	7.5	13.0	8.6	27.0	64.5
34.0	21.5	28.4	France	10.2	10.4	10.5	10.0	9.4	8.9	9.4	10.2	5.1	27.7	67.2
58.6	7.4	7.6	West Germany (former)	8.0	7.6	7.6	7.5	6.8	6.2	5.5	5.8	3.0	37.0	60.0
36.0	20.1	38.6	Greece	7.8	7.4	7.4	7.7	7.5	7.0	7.7	—	21.3	24.2	54.5
—	—	—	Iceland	0.8	0.8	0.8	0.8	1.6	1.6	2.1	—	10.7	26.4	62.9
47.2	24.9	20.9	Ireland	17.4	17.4	17.6	16.7	15.6	13.7	15.7	—	13.8	28.9	57.3
44.7	26.7	35.6	Italy	10.1	10.9	11.8	11.8	11.8	11.2	10.8	11.4	7.4	33.3	59.3
46.4	4.9	5.3	Japan	2.6	2.8	2.8	2.5	2.3	2.1	2.1	2.2	5.9	34.3	59.8
—	4.2	3.8	Luxembourg	1.8	1.2	1.7	1.7	1.1	1.0	1.2	—	3.3	30.5	66.2
62.8	6.8	6.8	Netherlands	10.9	10.3	9.6	9.2	8.3	7.5	7.0	6.7	4.0	24.6	71.4
62.6	18.4	15.9	New Zealand	4.1	4.0	4.0	5.5	7.1	7.7	10.2	10.3	10.6	23.5	65.9
56.6	12.7	10.4	Norway	2.6	2.0	2.1	3.2	4.9	5.2	5.5	5.9	5.6	23.1	71.3
55.4	9.8	14.9	Portugal	8.5	8.5	7.0	5.7	5.0	4.5	4.0	4.0	11.4	33.1	55.4
48.2	39.9	47.4	Spain	21.1	20.8	20.1	19.1	16.9	15.9	16.0	18.1	10.1	30.7	59.2
58.5	21.6	14.9	Sweden	2.8	2.7	1.9	1.6	1.3	1.7	2.9	5.3	3.4	25.4	71.2
50.4	—	—	Switzerland	0.9	0.8	0.7	0.6	0.5	0.5	1.0	2.6	5.6	33.2	61.2
51.3	—	—	Turkey	6.9	7.7	8.1	8.2	8.3	7.8	7.6	7.7	44.9	21.7	33.4
72.5	20.8	13.4	United Kingdom	11.5	11.6	10.4	8.3	6.1	5.5	7.9	9.5	2.2	26.2	71.6
63.0	14.3	12.2	United States	7.1	6.9	6.1	5.4	5.2	5.4	6.6	7.3	2.7	24.1	73.2
—	—	—	Average for countries reporting data for 8 year	7.8	7.7	7.4	6.9	6.4	6.2	6.9	7.5	—	—	—

— No data were reported or data were incomplete or inconsistent.

– Average not computed.

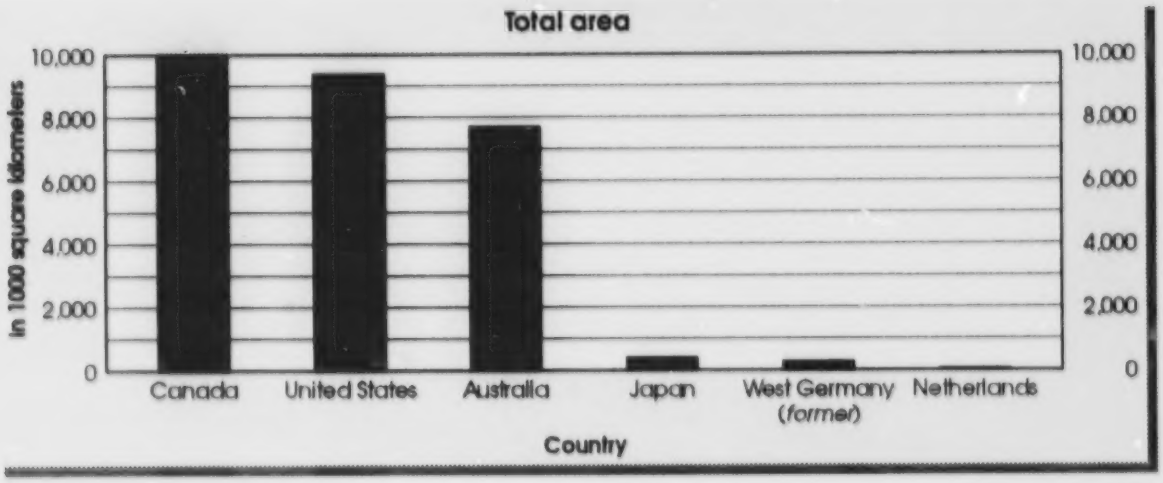
[1]Those persons under 25 years old.

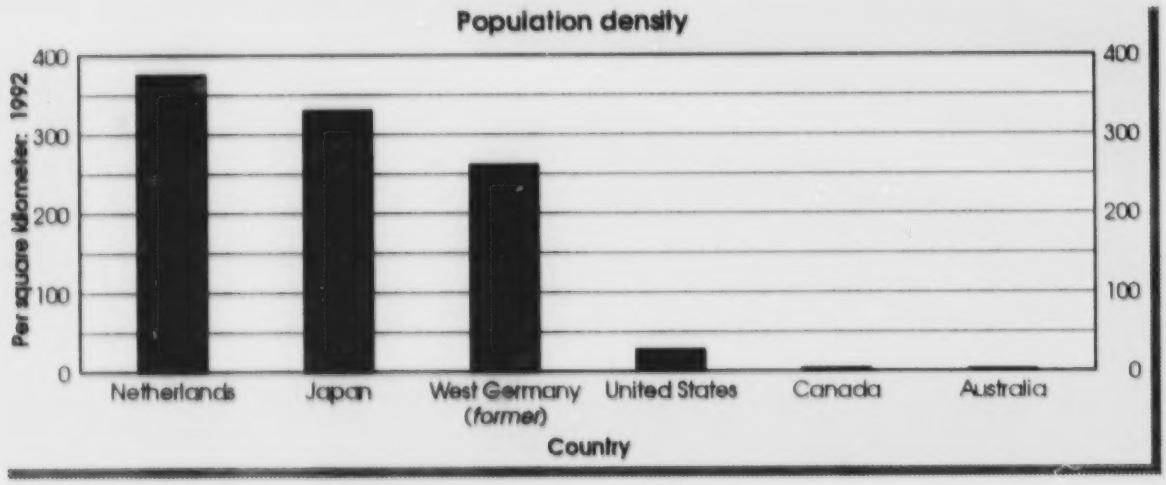
[2]Youth unemployment is calculated as a percentage of youth in the labor force.

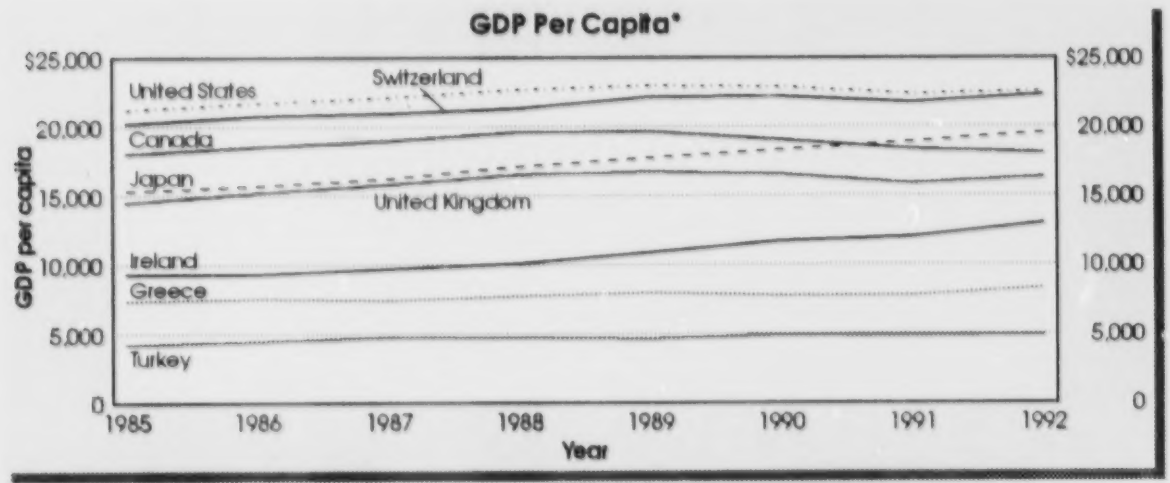
[3]Percentage of the total labor force employed in each sector.

SOURCE: Organization for Economic Cooperation and Development (OECD) *Education Statistics, 1985–1992 and OECD in Figures, 1995.*

Characteristics of OECD countries



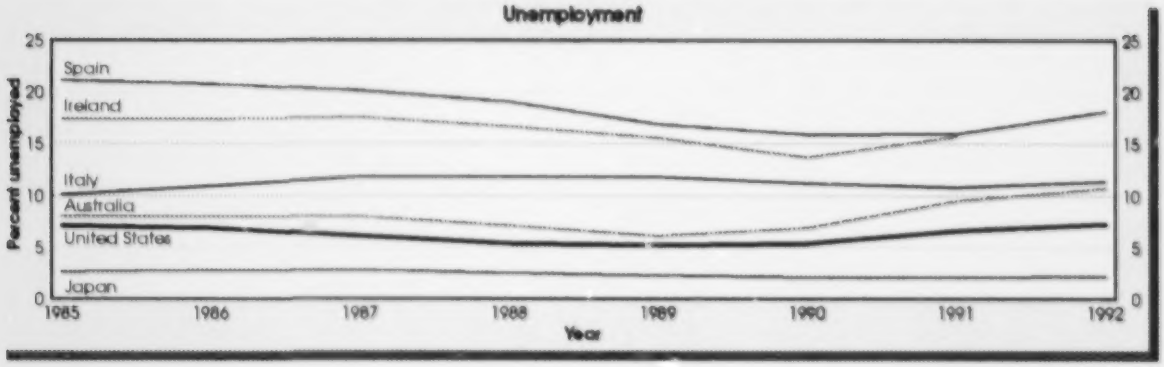


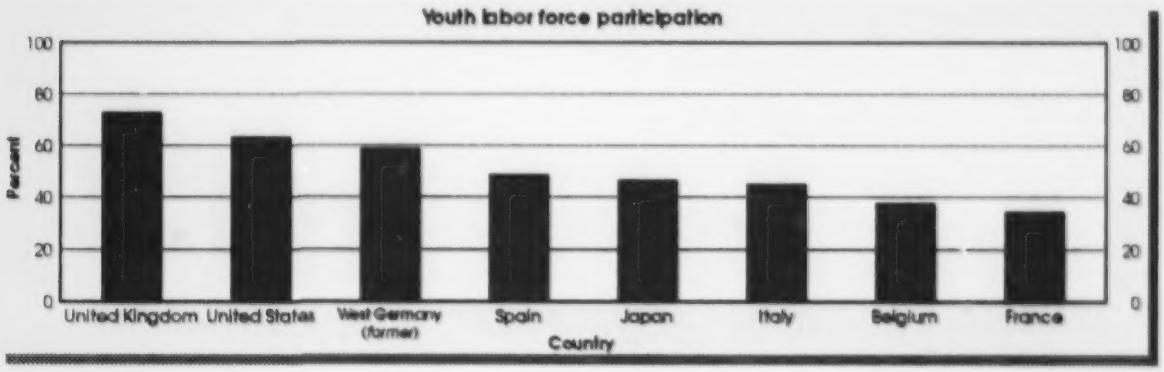


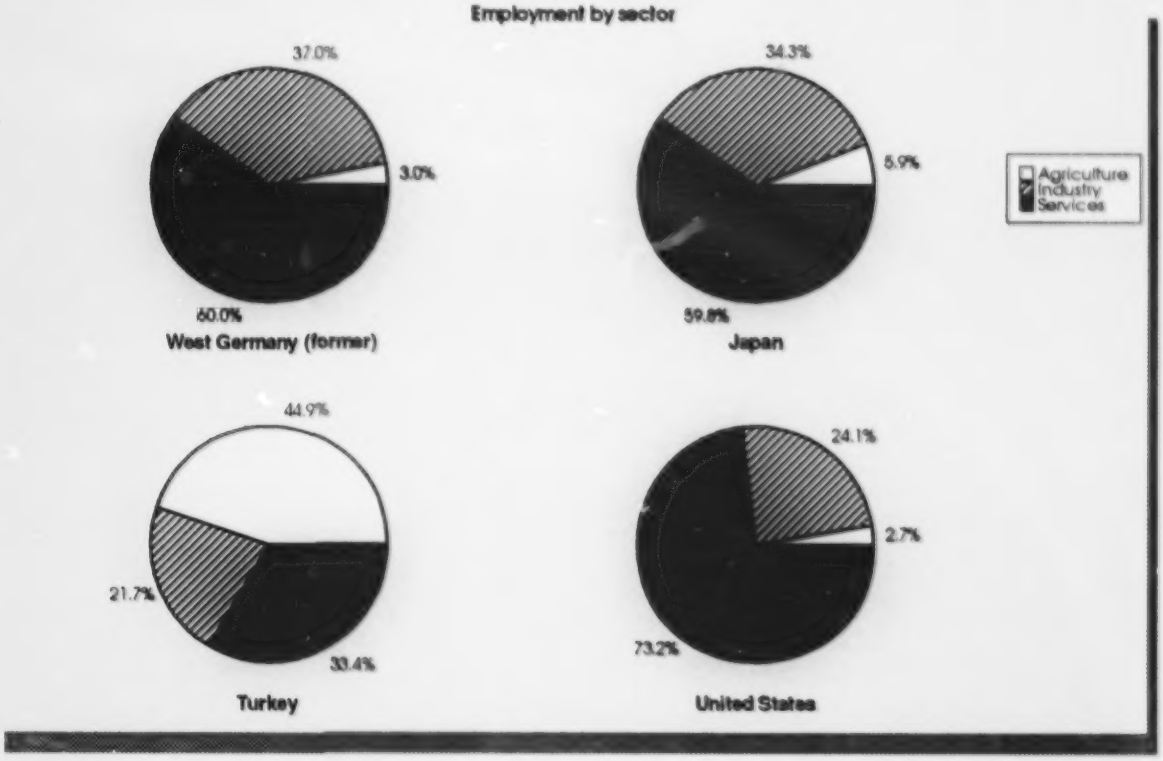
*In constant (1991) U.S. dollars based on PPP.

SOURCE: Organization for Economic Cooperation and Development (OECD) *Education Statistics, 1985-1992* and OECD in figures, 1995.

Characteristics of OECD countries







SOURCE: Organization for Economic Cooperation and Development (OECD) *Education Statistics, 1985-1992* and OECD in figures, 1995.

INDICATORS

THE SOCIAL AND ECONOMIC CONTEXT OF EDUCATION

Indicator 1: Youth and Population

This indicator provides information on the population size and age composition of the population for OECD member countries. The three age cohorts presented here are 5- to 13-year-olds, 14- to 17-year-olds, and 18- to 24-year-olds, which represent the theoretical age cohorts for primary and lower secondary education, upper secondary education, and tertiary education, respectively. The percentage of a population age 5 to 24 is an indicator of the potential demand for education services in a country. Trends in the proportion of youth in the population are used to estimate the amount of funding and organizational efforts a country must provide to its education system, now and in the future. In addition, examining trends in the population distribution over time permits economists to estimate the relative size of the labor force as compared to the size of the student population.

- In 1991, population sizes of OECD member countries varied dramatically, from 260,000 (Iceland) to 253 million (United States). Moreover, with the exception of Portugal, Ireland, and Italy, every OECD country reported an increase in its total population between 1985 and 1991. The largest increase occurred in Turkey (14 percent); and the United States and Canada each reported increases in their total population of about 6 percent.

- Among those countries with data available (with the exception of Finland and the United States), between 1985 and 1991, the percentage of the population age 5 to 13 decreased in all OECD countries. Among the G-7 countries, the declines were largest in France, Italy, and Japan. In contrast, the 5- to 13-year-old population in the United States increased only slightly as a percentage of the total population by less than 1 percentage point.

- In most OECD countries, the percentage of the population age 14 to 17 dropped between 1985 and 1991. Except for Japan, the percentage of the population age 14 to 17 declined in all the G-7 countries. In terms of changes in percentage points, the declines were largest in the former West Germany and the United Kingdom.

- Between 1985 and 1991, the percentage of the population age 18 to 24 decreased in most OECD countries. In the G-7 countries, in terms of changes in percentage points, the declines were largest in Canada, the United States, and the former West Germany. In contrast, between 1985 and 1991, the 18- to 24-year-old population in Japan increased substantially, from 9.3 to 10.4 percent of the total population.

- In Japan, the percent of the total population age 5 to 13 declined between 1985 and 1991; however, the percent age 14 to 17 and 18 to 24 increased during that same time period. The opposite trend was found in the United States — the proportion of the total population age 5 to 13 increased, while the percent aged 14 to 17 and 18 to 24 decreased.

Table 1

Youth and population: 1985–1991

Total population (millions)								Percent of total population age 5–13						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
15.79	16.02	16.26	16.52	16.80	17.05	17.29	Australia	14.5	14.0	13.6	13.3	13.1	13.1	13.0
7.56	7.57	7.58	7.60	7.62	7.72	7.82	Austria	10.9	10.7	10.6	10.5	10.5	10.4	10.5
9.86	9.86	9.87	9.92	9.94	9.97	10.01	Belgium	11.4	11.2	11.2	11.0	11.0	10.9	10.9
25.18	25.37	25.64	25.94	26.25	26.61	26.74	Canada	12.8	12.7	12.6	12.5	12.5	12.4	12.5
5.11	5.12	5.13	5.13	5.13	5.14	5.15	Denmark	12.0	11.7	11.3	10.9	10.5	10.1	9.9
4.90	4.92	4.93	4.95	4.96	4.99	5.03	Finland	11.5	11.5	11.6	11.8	11.8	11.8	11.6
55.17	55.39	55.63	55.88	56.42	56.74	57.05	France	12.8	12.6	12.4	12.3	12.1	12.1	12.1
61.02	61.07	61.08	61.45	62.06	63.25	63.89	West Germany (former)	9.1	8.8	8.7	8.6	8.7	8.7	8.9
9.93	9.96	9.98	10.01	10.04	10.14	10.26	Greece	—	—	—	—	—	—	—
0.24	0.24	0.25	0.25	0.25	0.26	0.26	Iceland	15.7	15.8	15.5	15.2	15.2	15.0	—
3.54	3.54	3.54	3.54	3.52	3.50	3.52	Ireland	17.9	17.8	17.7	17.5	17.5	17.5	17.2
57.13	57.22	57.33	57.44	57.53	57.65	57.11	Italy	12.7	12.2	11.7	11.2	10.8	10.3	10.1
120.75	121.49	122.09	122.61	123.12	123.54	123.92	Japan	14.0	13.7	13.2	12.7	12.2	11.8	11.5
0.37	0.37	0.37	0.38	0.38	0.38	0.39	Luxembourg	10.2	9.9	10.0	10.0	10.1	10.1	—
14.49	14.57	14.67	14.76	14.85	14.95	15.07	Netherlands	12.0	11.6	11.2	11.0	10.8	10.7	10.7
3.27	3.28	3.30	3.32	3.33	3.36	3.41	New Zealand	15.3	14.8	14.4	14.0	13.7	13.5	13.4
4.15	4.17	4.19	4.21	4.23	4.24	4.26	Norway	12.5	12.1	11.8	11.5	11.2	11.0	11.0
9.91	9.90	9.90	9.89	9.80	9.81	9.81	Portugal	15.3	15.1	14.8	14.5	14.6	14.3	13.7
38.51	38.67	38.72	38.81	38.89	38.96	39.03	Spain	15.0	14.6	14.4	13.9	13.4	12.9	12.4
8.35	8.37	8.40	8.44	8.49	8.56	8.62	Sweden	11.3	11.1	10.8	10.6	10.4	10.2	10.2
6.53	6.57	6.62	6.67	6.65	6.71	6.79	Switzerland	10.6	10.3	10.1	10.0	10.1	10.1	10.1
50.66	51.63	52.75	53.97	55.26	56.47	57.69	Turkey	20.6	21.2	22.3	21.8	21.2	20.6	19.9
56.62	56.76	56.93	57.07	57.24	57.41	57.40	United Kingdom	11.4	11.2	11.1	11.0	11.0	11.1	11.3
239.28	241.63	243.94	246.31	248.78	249.92	252.69	United States[1]	12.6	12.5	12.5	12.6	12.7	12.8	12.8
--	--	--	--	--	--	--	Average for countries reporting data for 7 years[2]	13.1	12.9	12.8	12.5	12.4	12.2	12.1

— No data were reported or data were incomplete or inconsistent.

-- Average not computed.

[1]The OECD method of estimating population differs from the estimation method in U.S. published sources.

[2]This is not a strict average of the percentages. Averages are weighted by dividing the total number of people enrolled in applicable countries at each age group by the total number of people in all applicable countries at each age group.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 1 (continued)

Youth and population: 1985–1991

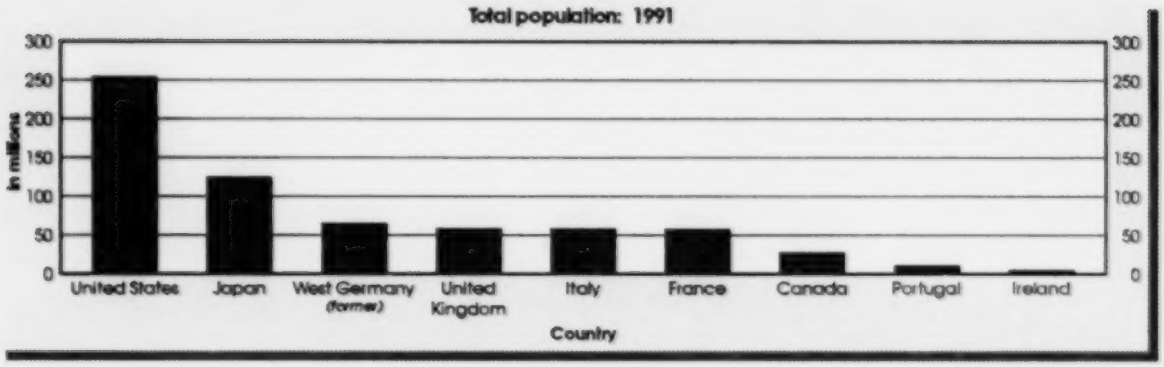
Percent of total population age 14–17								Percent of total population age 18–24						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
6.6	6.8	6.9	6.8	6.7	6.4	6.1	Australia	11.8	11.6	11.4	11.3	11.2	11.2	11.3
6.4	6.1	5.8	5.5	5.3	5.1	4.9	Austria	12.1	12.1	12.0	11.9	11.6	11.3	11.2
5.8	5.7	5.7	5.5	5.3	5.1	4.9	Belgium	11.2	10.9	10.9	10.7	10.5	10.3	10.1
6.1	6.0	5.9	5.8	5.6	5.5	5.5	Canada	12.6	12.1	11.6	11.3	10.9	10.5	10.3
5.8	5.7	5.7	5.7	5.7	5.7	5.5	Denmark	11.0	11.2	11.2	11.1	10.8	10.7	10.5
5.6	5.3	5.0	4.8	4.8	4.9	5.0	Finland	10.8	10.7	10.5	10.2	9.9	9.6	9.2
6.2	6.2	6.2	6.2	6.1	5.8	5.5	France	10.9	10.9	10.8	10.7	10.5	10.6	10.6
6.1	5.7	5.2	4.7	4.4	4.1	4.0	West Germany (former)	12.1	12.1	12.1	11.8	11.4	11.0	10.6
—	—	—	5.7	5.5	5.5	—	Greece	—	—	—	—	—	—	—
6.7	6.6	6.7	6.8	6.8	6.8	—	Iceland	13.0	12.6	12.4	12.1	11.9	11.5	—
7.7	7.8	7.8	7.8	8.0	8.0	7.7	Ireland	11.7	11.7	11.6	11.5	11.2	11.0	11.6
6.5	6.4	6.3	6.2	6.2	6.0	5.9	Italy	11.5	11.6	11.7	11.7	11.6	11.5	11.4
6.2	6.3	6.4	6.5	6.6	6.5	6.4	Japan	9.3	9.5	9.7	9.9	10.1	10.3	10.4
5.5	5.3	5.0	4.8	4.5	4.4	—	Luxembourg	11.1	10.9	10.8	10.5	10.2	9.9	—
6.8	6.7	6.5	6.1	5.7	5.4	5.1	Netherlands	12.2	12.1	12.0	12.0	11.9	11.7	11.5
7.5	7.5	7.4	7.3	7.0	6.7	6.4	New Zealand	12.8	12.5	12.0	12.0	11.8	11.7	11.5
6.4	6.4	6.3	6.2	6.0	5.8	5.5	Norway	10.7	10.9	11.0	11.1	11.2	11.1	11.0
6.9	6.9	7.0	7.0	6.9	6.8	6.9	Portugal	12.1	12.1	12.1	12.2	13.2	12.9	12.8
6.8	6.8	6.8	6.8	6.8	6.8	6.7	Spain	11.8	11.8	11.9	11.9	11.9	11.8	11.8
5.4	5.3	5.3	5.3	5.3	5.2	5.0	Sweden	9.8	10.0	10.1	10.0	9.9	9.8	9.7
5.8	5.6	5.4	5.2	5.1	4.8	4.7	Switzerland	11.0	11.0	10.9	10.8	10.7	10.4	10.1
8.7	8.6	8.8	8.8	8.8	8.9	8.9	Turkey	13.6	13.8	13.3	13.3	13.3	13.4	13.4
6.3	6.2	6.0	5.7	5.4	5.2	4.9	United Kingdom	11.6	11.7	11.6	11.5	11.3	11.0	10.8
6.2	6.1	6.0	5.8	5.5	5.4	5.3	United States	12.1	11.7	11.3	11.0	10.7	10.7	10.5
6.5	6.4	6.3	6.2	6.1	5.9	5.7	Average for countries reporting data for 7 years[2]	11.6	11.5	11.4	11.3	11.2	11.1	11.0

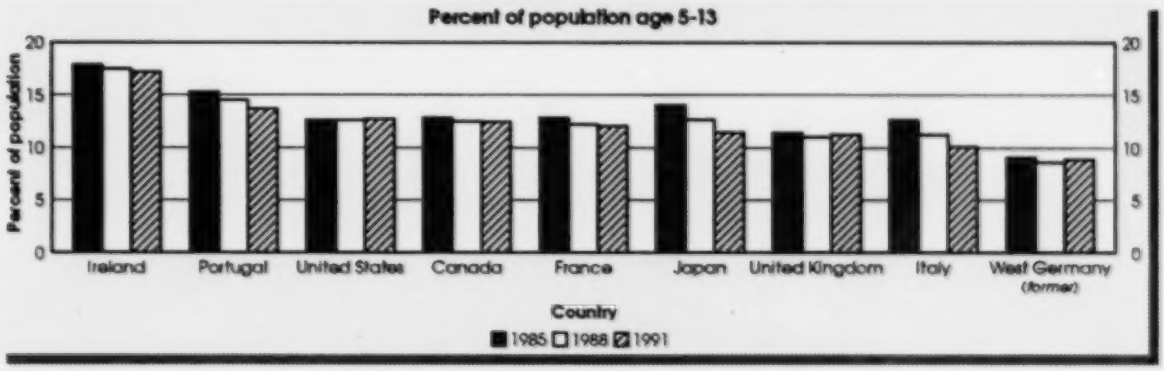
— No data were reported or data were incomplete or inconsistent.

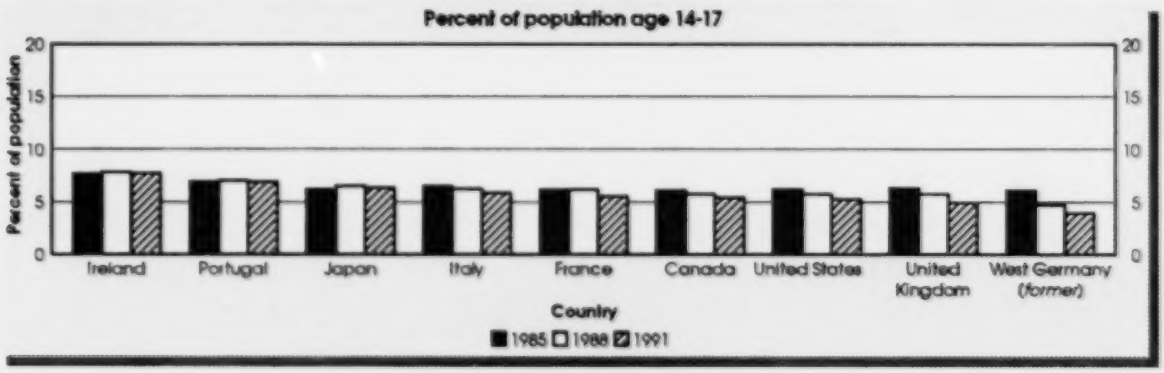
[2]This is not a strict average of the percentages. Averages are weighted by dividing the total number of people enrolled in applicable countries at each age group by the total number of people in all applicable countries at each age group.

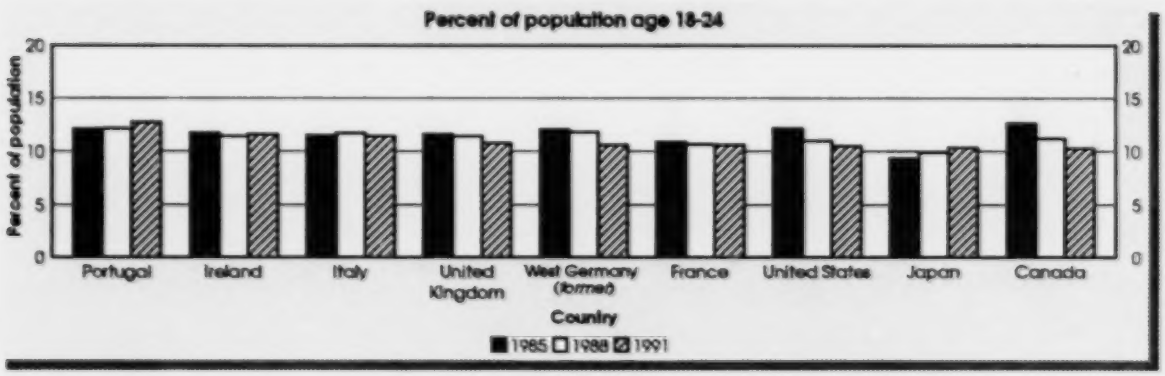
SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 1 – Youth and population: 1985–1991









SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

PARTICIPATION IN EDUCATION

Indicator 2: Enrollment Rates in Formal Education

Several factors influence participation in formal education, including the availability of an education program, the desirability of an education, and the nation's laws regarding compulsory education.[1] Examining differences in enrollment rates across countries and over time may highlight differences in the value a country places on education or the dependency of its economy on a trained workforce. National programs can produce a greater availability of educational opportunities, as well as make them more desirable, and countries can mandate attendance.

- Most countries showed increases in participation for the 5- to 24-year-olds' cohort between 1985 and 1991. While the United States' enrollment rate for this cohort increased 4 percentage points, from about 70 percent in 1985 to 74 percent in 1991, the largest increases in percentage points occurred in New Zealand (7), Canada (6), and the United Kingdom (5).

- Enrollment rates of 5- to 13-year-olds, considered the age of compulsory education in many countries, remained relatively stable in most countries between 1985 and 1991. In 1991, enrollment rates were well above 95 percent in all the major industrialized countries and above 90 percent in every OECD country with data available, except for Denmark, Sweden, and Turkey.

- Between 1985 and 1991, participation in lower and upper secondary education by 14- to 17-year-olds either increased or remained stable in most countries with available data. The largest increases occurred in Spain and New Zealand — about 14 percentage points each. In the G-7 countries, the largest increase in participation rates in terms of percentage points occurred in the United Kingdom, France, and Canada. Participation rates increased marginally in the United States and Japan, but declined in the former West Germany.

- All OECD countries with data available reported increases in net enrollment of 18- to 24-year-olds at the tertiary level, from 1985 to 1991. New Zealand, Norway, France, and Spain showed the largest increases, ranging from 5 to 7 percentage points. Canada and the United States also reported fairly large increases of about 4 percentage points each, during this time period.

[1]Table S4, in the Supplementary Notes and Tables section, shows the legal school-leaving age for compulsory education in each country.

Table 2

Participation in formal education

Enrollment rates: 1985–1991[1]

Primary and lower secondary by 5- to 13-year-olds[2,3]								Lower and upper secondary by 14- to 17-year-olds						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
95.4	95.7	96.2	97.1	—	—	97.1	Australia	—	—	—	—	—	—	91.4
94.1	—	—	—	96.5	—	—	Austria	—	—	—	—	—	—	—
99.5	100.2	99.0	98.0	—	—	99.0	Belgium	91.7	93.2	92.5	92.6	—	—	94.6
100.0	100.4	100.5	100.9	101.4	101.9	101.9	Canada	92.5	92.6	92.6	92.7	94.7	95.8	94.0
89.4	89.5	89.9	89.7	90.2	89.9	89.1	Denmark	89.9	90.3	90.9	91.1	91.0	90.0	90.0
83.5	—	—	—	—	83.7	—	Finland	89.8	—	—	—	—	98.2	—
101.3	101.2	101.1	101.1	101.0	100.5	100.5	France	93.0	93.4	93.1	94.4	95.3	95.1	95.4
97.2	96.5	96.7	97.9	97.2	96.6	96.6	West Germany (former)	94.7	94.9	95.9	88.0	88.7	94.2	93.6
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
99.3	99.7	99.7	100.5	100.0	99.2	99.2	Ireland	83.6	84.7	86.6	87.8	87.2	87.2	89.7
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
97.5	97.9	98.2	98.4	98.3	98.0	97.7	Japan	95.7	94.0	94.0	94.0	94.5	95.7	96.1
—	95.7	95.3	96.5	95.3	—	—	Luxembourg	—	81.0	82.3	82.0	80.7	—	—
99.4	99.0	99.5	100.0	100.0	99.9	99.9	Netherlands	93.0	92.2	92.3	92.2	92.0	92.5	92.7
100.0	100.1	100.3	100.9	101.8	102.1	101.3	New Zealand	74.4	74.0	76.2	80.0	—	84.2	88.4
89.4	89.8	90.4	91.0	91.3	92.0	92.3	Norway	90.0	90.4	90.4	89.7	91.2	93.2	93.5
—	—	—	90.9	—	—	92.3	Portugal	—	—	—	—	—	—	69.1
102.8	103.9	104.6	103.9	104.6	104.7	104.6	Spain[4]	67.3	69.5	71.5	75.0	77.4	79.1	81.6
88.5	88.6	88.6	88.7	88.3	88.0	87.5	Sweden	91.3	92.4	92.2	92.3	91.7	91.4	91.6
91.6	91.4	91.5	91.5	91.9	92.6	93.0	Switzerland	88.9	89.0	89.1	89.3	89.3	89.8	90.0
—	—	—	—	73.7	75.7	77.6	Turkey	—	—	—	33.0	32.5	32.6	33.9
104.3	103.7	102.6	102.6	101.6	101.4	101.1	United Kingdom	77.7	81.3	79.7	80.7	82.5	83.3	84.2
98.3	98.6	98.7	99.7	98.7	99.7	99.6	United States	92.1	92.7	92.5	91.6	92.6	92.9	92.9
97.1	97.2	97.3	97.6	97.6	97.6	97.5	Average for countries reporting data for 7 years	88.4	89.0	89.3	89.1	89.8	90.8	91.2

— Data not available.

[1]Enrollment data include full-time and part-time enrollments.

[2]Excludes early childhood education.

[3]Refer to the supplementary notes for an explanation of why, in some cases, enrollment rates exceed 100 percent.

[4]The data are for full-time students only; no data available for part-time enrollment.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992*.

Table 2 (continued)
Participation in formal education
Enrollment rates: 1985–1991[1]

Tertiary education by 18- to 24-year-olds								All levels of education by 5- to 24-year-olds[2]						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	22.2	Australia	—	—	—	—	—	—	70.0
—	—	—	—	—	—	—	Austria	—	—	—	—	—	—	—
17.6	18.2	18.6	19.2	—	—	21.9	Belgium	68.8	69.8	69.4	69.3	—	—	71.9
19.0	19.6	20.1	20.6	21.3	22.0	22.9	Canada	68.2	69.1	69.8	70.8	72.1	73.2	73.9
11.3	11.3	11.4	11.9	12.2	12.6	13.3	Denmark	66.0	65.5	65.2	64.9	65.2	64.9	65.0
13.2	—	—	—	—	17.6	—	Finland	62.3	—	—	—	—	66.6	—
15.9	16.5	16.9	17.6	18.8	20.0	21.6	France	71.3	71.8	72.1	72.9	73.8	74.0	74.8
11.9	11.7	11.4	11.3	11.7	12.2	12.8	West Germany (former)	66.6	65.6	64.9	63.2	61.7	64.5	65.1
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
10.6	11.4	11.7	12.2	13.5	14.7	14.9	Ireland	69.4	70.2	70.8	71.7	72.2	72.6	71.9
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
—	18.8	18.5	18.8	—	—	—	Japan	—	71.8	71.1	70.5	—	—	—
—	2.1	2.3	2.6	2.6	—	—	Luxembourg	—	57.9	58.3	59.3	59.1	—	—
13.7	13.9	14.2	14.9	15.6	16.7	18.0	Netherlands	68.8	68.4	68.3	68.3	68.2	68.6	69.1
11.6	12.4	15.3	15.8	17.1	16.4	18.4	New Zealand	63.3	63.4	66.2	66.8	—	68.6	70.0
11.3	11.1	12.2	12.6	13.8	15.8	17.1	Norway	65.9	65.6	65.4	65.1	65.5	67.8	68.6
5.9	5.0	6.0	—	—	—	9.6	Portugal	—	—	—	—	—	—	59.6
13.7	14.7	15.3	16.5	17.5	18.6	19.1	Spain[3]	66.5	67.3	67.9	68.3	69.1	69.7	69.9
9.5	9.4	9.6	9.8	10.0	10.2	10.8	Sweden	63.0	62.5	62.1	62.0	61.7	61.7	62.0
8.0	8.0	8.3	8.4	8.7	9.3	9.7	Switzerland	64.5	64.0	63.7	63.6	63.8	64.7	65.3
—	—	—	4.9	5.8	6.4	6.9	Turkey	—	—	—	—	45.2	45.9	46.6
—	—	—	—	11.1	11.8	12.8	United Kingdom	59.7	59.8	60.7	60.9	62.9	63.7	64.7
25.4	25.4	26.3	28.0	28.6	28.9	29.0	United States	69.6	70.2	71.2	72.5	72.9	73.6	73.6
13.5	13.8	14.4	15.0	15.7	16.4	17.3	Average for countries reporting data for 7 years	66.6	66.7	66.8	67.0	67.4	68.2	68.7

— Data not available.

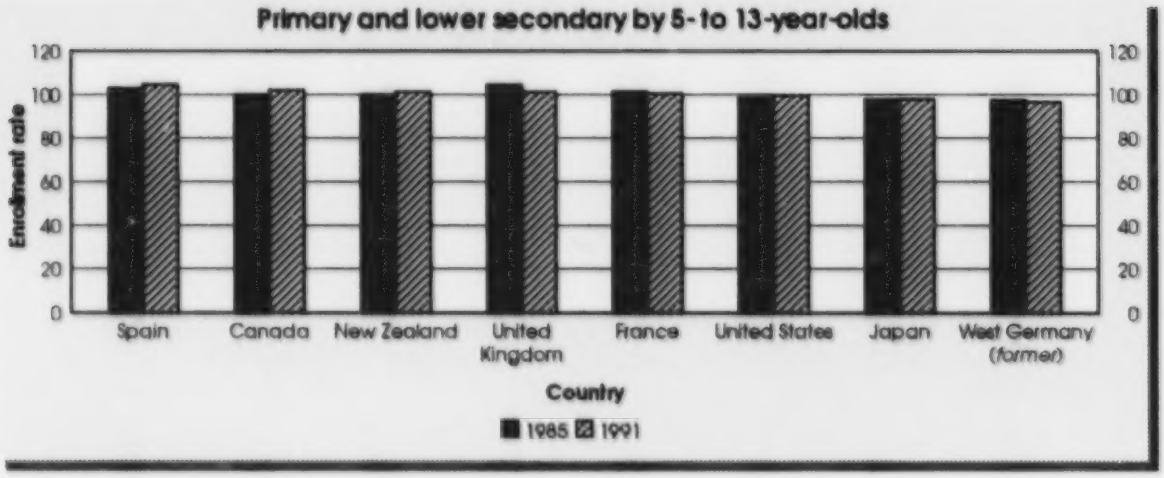
[1]Enrollment data include full-time and part-time enrollments.

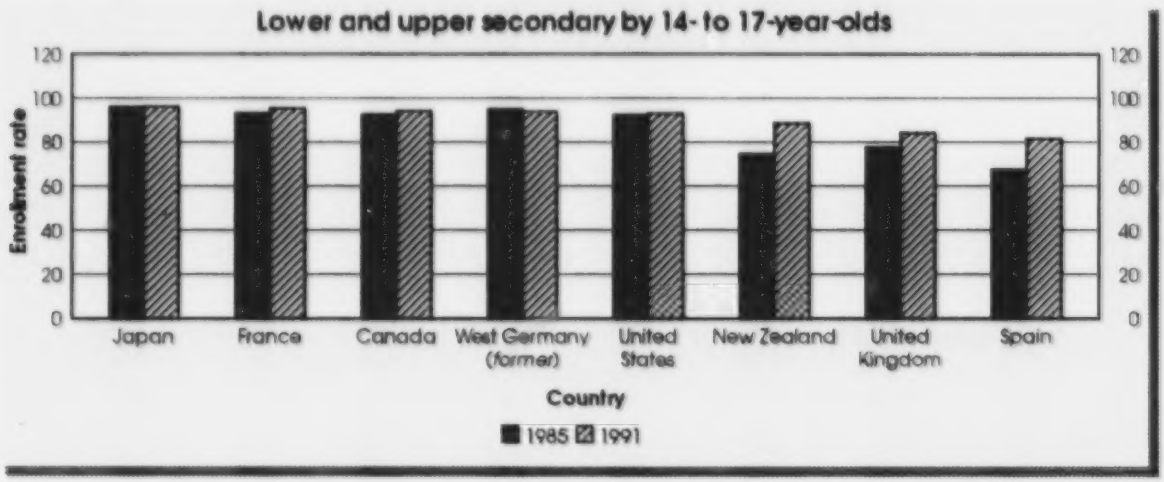
[2]Excludes early childhood education.

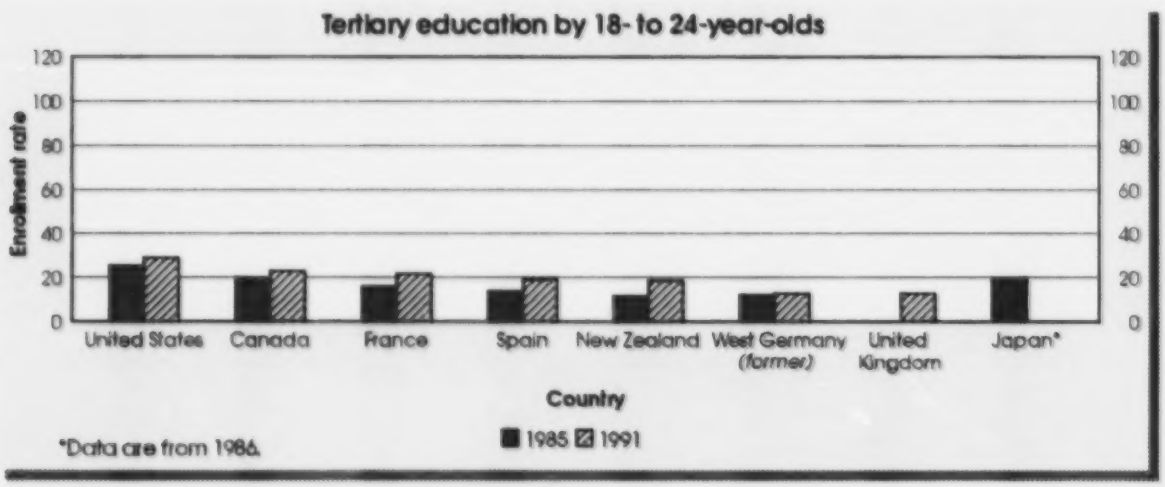
[3]The data are for full-time students only; no data available for part-time enrollment.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 2 – Enrollment rates in formal education: 1985–1991







SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992*.

Indicator 3: Private School Enrollment

In most countries, private schools either offer an alternative to public schools or provide the only schooling available at certain levels. Many factors can influence the proportion of students in private schools, including the tuition rates, family income, the relative value placed on education, the availability of public schooling, and satisfaction with public schools. Differences in private school enrollments across countries or time may indicate differences or changes in any of these factors.

- On average, less than 20 percent of students attend private school at each education level in the OECD countries with data available. However, in several countries, including Ireland, the Netherlands, and Belgium, the proportion of students attending private school consistently exceeds 50 percent at the primary, lower secondary, and upper secondary education levels. Australia and France also have reported moderately high levels, with around one-fifth of their students enrolled in private schools at the lower secondary level.

- Between 1985 and 1991, private schools' share of enrollment in primary education changed by less than 1 percentage point in most OECD countries. Among the G-7 countries, enrollment shares declined most in the United States, followed by Italy and France. In Canada, the former West Germany, Japan, and the United Kingdom enrollment shares increased by less than 1 percentage point.

- The private school enrollment proportion at the lower secondary level increased slightly between 1985 and 1991 in the majority of the OECD countries with data available. However, several countries, including Austria, Denmark, the former West Germany, and Portugal, showed increases of more than one point in the percentage of children enrolled in private schools. Australia and Spain showed decreases of more than 2 percentage points.

- At the upper secondary level, the private school enrollment proportion decreased in about half of the OECD countries with available data, and increased in the other half. Private school enrollment shares declined in most of the G-7 countries, including Canada, France, Italy, the United Kingdom, and the United States, but increased slightly in the former West Germany and Japan.

- Private school enrollment proportions in tertiary education increased in several countries between 1985 and 1991, most dramatically in Portugal. Enrollment shares in the G-7 countries increased in Canada, France, and Japan, but decreased slightly in Italy and the United States.

Table 3

Percentage of students enrolled in private school: 1985–1991

Primary level								Lower secondary level						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
23.6	24.1	24.4	24.7	24.8	—	25.1	Australia	27.4	20.1	20.1	20.4	20.7	—	22.1
3.8	3.9	3.8	3.8	3.8	3.9	4.0	Austria	5.6	5.6	5.8	6.0	6.2	6.5	6.7
54.1	54.7	55.2	55.9	55.8	56.1	56.1	Belgium	—	—	—	—	—	—	66.1
3.0	3.2	3.3	3.5	3.5	3.6	3.7	Canada	6.1	6.4	6.6	6.7	6.7	6.7	6.6
8.5	9.0	9.3	9.8	10.1	9.3	9.3	Denmark	9.9	10.3	10.8	11.2	11.6	11.6	11.6
0.6	0.6	0.6	0.6	0.9	0.9	0.9	Finland	3.0	3.0	2.9	2.9	3.0	3.1	3.2
15.2	15.2	15.2	15.1	15.0	15.0	14.9	France	20.5	20.9	20.9	21.3	21.5	21.5	21.4
1.5	1.6	1.6	1.7	1.7	1.8	1.7	West Germany (former)	6.2	6.5	6.8	7.0	7.4	7.5	7.6
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
99.7	99.7	99.7	99.7	99.7	99.7	99.7	Ireland	64.0	63.9	63.6	63.5	63.6	63.7	63.3
7.7	7.7	7.7	7.8	7.4	7.5	7.1	Italy	4.6	4.5	4.5	4.5	4.2	4.4	4.4
—	0.5	0.6	0.6	0.6	0.7	0.8	Japan	—	2.9	3.0	3.1	3.3	3.5	3.8
—	—	—	0.9	0.8	—	—	Luxembourg	—	10.6	11.3	11.2	11.0	—	—
68.6	68.7	68.9	65.9	69.0	69.0	69.0	Netherlands	78.0	77.8	77.4	77.3	75.7	76.7	78.6
2.0	2.1	2.2	2.3	2.5	2.5	2.5	New Zealand	3.9	4.1	4.3	4.4	4.5	4.5	4.6
0.7	1.0	0.9	1.0	1.1	1.1	1.2	Norway	0.7	1.0	0.9	0.9	1.1	1.2	1.2
6.6	7.2	7.1	6.3	—	6.5	7.5	Portugal	4.7	10.6	9.1	6.9	—	9.7	8.9
34.6	34.2	34.6	33.6	34.2	34.5	34.9	Spain	37.8	37.0	36.9	35.6	35.6	35.1	35.1
0.7	0.7	0.7	0.7	0.8	0.9	0.9	Sweden	0.6	0.7	0.7	0.8	0.8	0.8	0.8
2.2	2.3	2.3	2.4	2.4	2.4	2.4	Switzerland	4.5	4.6	4.9	5.0	5.0	5.0	4.9
0.3	0.4	0.5	0.5	0.6	0.6	0.6	Turkey	1.8	2.1	2.3	2.7	2.8	2.8	2.8
4.5	4.5	4.6	4.7	4.8	4.8	4.8	United Kingdom	7.2	7.5	8.0	8.2	8.5	7.8	7.9
13.6	13.2	12.7	12.7	11.9	12.0	10.5	United States	9.8	9.9	10.0	10.1	9.8	9.8	9.4
17.9	17.9	18.0	17.9	18.1	18.1	18.0	Average for countries reporting data for 7 years	15.5	15.6	15.7	15.8	15.8	15.8	15.9

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 3 (continued)

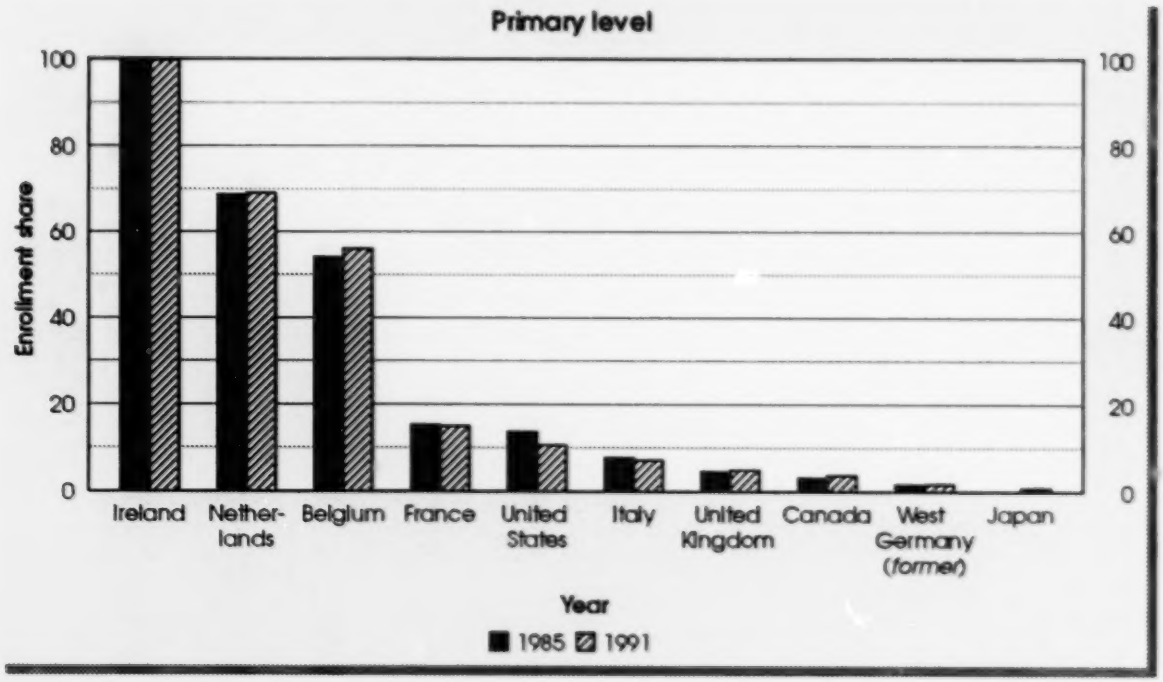
Percentage of students enrolled in private school: 1985–1991

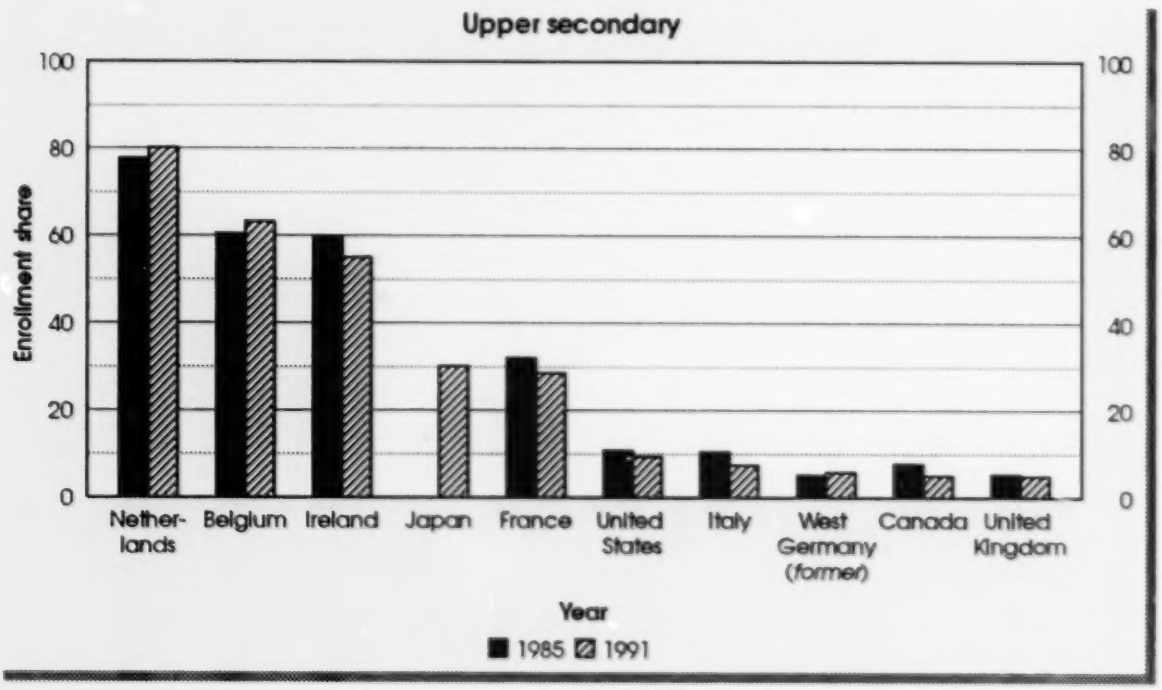
Upper secondary level								Tertiary level						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
23.0	23.6	23.5	23.4	23.6	—	—	Australia	—	—	—	—	—	—	—
13.6	14.2	11.4	11.3	10.4	11.4	11.7	Austria	2.8	2.6	2.4	2.4	2.3	2.2	2.2
60.4	60.6	61.2	61.9	62.6	63.4	63.2	Belgium	62.9	63.3	64.0	—	64.6	64.4	64.2
7.7	6.7	5.6	4.9	4.9	4.8	5.0	Canada	10.2	11.2	12.3	13.1	13.9	14.8	15.2
2.1	2.0	1.9	1.9	2.0	2.0	2.0	Denmark	—	—	—	—	—	—	—
—	—	8.0	8.2	8.0	8.4	8.8	Finland	2.7	2.7	2.7	2.9	3.3	3.4	3.4
31.9	31.1	30.6	29.8	29.8	29.1	28.5	France	11.3	11.7	12.0	12.2	12.5	12.3	13.0
5.1	5.1	5.1	5.3	5.2	5.4	5.8	West Germany (former)	0.4	0.4	0.3	0.3	0.3	0.5	0.4
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
59.7	59.5	60.0	59.4	58.2	57.9	55.0	Ireland	2.3	2.7	2.6	2.8	2.7	2.0	2.0
10.4	10.0	9.7	9.6	8.8	10.4	7.4	Italy	6.4	6.6	6.9	6.7	6.9	6.6	6.0
—	29.1	29.2	29.3	29.6	29.8	30.1	Japan	—	78.2	78.3	78.6	78.5	78.8	79.1
—	9.0	9.0	8.5	8.1	—	—	Luxembourg	—	—	—	—	—	—	—
77.6	77.8	77.9	76.9	78.4	—	80.2	Netherlands	58.3	58.6	55.9	56.3	56.4	56.3	56.3
4.0	4.1	4.1	4.2	4.1	4.3	4.0	New Zealand	—	—	—	—	—	—	—
7.6	7.4	7.3	7.4	8.7	8.4	8.3	Norway	17.7	—	23.1	20.4	19.3	17.5	16.5
—	5.6	5.0	5.2	—	—	—	Portugal	13.4	14.2	23.4	19.3	21.3	—	28.0
34.3	33.1	31.0	29.7	29.2	27.7	26.9	Spain	9.1	9.3	9.4	9.5	8.7	8.8	8.7
1.3	1.4	1.5	1.4	1.4	1.4	1.5	Sweden	—	—	—	—	—	1.5	1.4
6.4	6.3	6.3	6.4	6.6	6.8	6.7	Switzerland	—	—	—	7.1	6.6	7.5	7.4
1.9	1.9	2.0	2.1	2.3	2.5	2.7	Turkey	—	—	—	—	—	0.7	0.8
5.2	5.2	5.3	5.4	4.5	4.9	4.9	United Kingdom	—	—	—	—	—	—	—
10.7	10.4	10.0	9.6	9.6	9.9	9.4	United States	22.6	22.6	22.3	21.9	22.2	21.9	21.7
16.4	16.2	15.8	15.6	15.5	15.6	15.2	Average for countries reporting data for 7 years	12.6	12.8	12.7	12.8	12.9	12.9	12.9

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 3 – Percentage of students enrolled in private school: 1985–1991





SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 4: Enrollment Rates in Upper Secondary Education

In the United States, upper secondary education is the equivalent of grades 10 through 12 (the last three years of high school). In most countries, upper secondary education can include an academic or a vocational-technical curriculum. For most countries, compulsory education ends before the last year of secondary education (12th grade) in the U.S.[2] Examining enrollment rates at this level shows what percentage of students at a particular age are still in school before receiving the U.S. equivalent of a high school diploma. The participation rates in upper secondary programs are an indication of the value placed on education, the economic need for skilled workers, and the availability of diverse institutions to meet all students' needs.

- Enrollment rates in upper secondary education generally increased from 1985 to 1991, at all ages between 16 and 19. Several countries, including New Zealand, the United Kingdom, Ireland, Norway, and Spain, showed marked increases in upper secondary enrollment rates at all age levels.

- From 1985 to 1991, the majority of OECD countries reported increases in enrollment rates in upper secondary education at ages 16 and 17. New Zealand, Spain, the United Kingdom, and Ireland reported the largest increases in percentage points at both of these ages. The United States and the former West Germany were the only two countries to show decreases in enrollment rates at both 16 and 17, between 1985 and 1991, although enrollment of 16-year-olds decreased by almost 4 percentage points in Sweden. In the former West Germany, enrollment rates of 16-year-olds dropped almost 8 percentage points between 1985 and 1991.

- Enrollment rates for 18-year-olds in upper secondary education increased in most OECD countries between 1985 and 1991. While France showed the largest increase during that period (almost 17 percentage points), all of the G-7 countries reported an increase in enrollment rates.

- All countries showed large drops in enrollment rates between ages 18 and 19, suggesting that many students complete upper secondary education at age 18. Nonetheless, enrollment rates of 19-year-olds increased between 1985 and 1991, in nearly all countries reporting enrollment data. In France, the enrollment rate for 19-year-olds more than doubled over the period, and in the former West Germany, the rate increased by 8 percentage points. Enrollment rates of 19-year-olds also increased between 1 and 2 percentage points in Canada, the United Kingdom, and the United States.

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[2]Table S4, in the Supplementary Notes and Tables section, shows the legal school-leaving age for compulsory education in each country.

Table 4

Enrollment rates in upper secondary education: 1985–1991[1]

Enrollment rates for 16-year-olds								Enrollment rates for 17-year-olds						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	62.6	Australia	—	—	—	—	—	—	53.2
85.1	—	—	—	—	—	—	Austria	78.0	—	—	—	—	—	—
90.0	92.6	93.0	91.2	—	—	90.3	Belgium	80.9	82.8	84.7	85.9	—	—	87.4
89.3	89.1	88.4	90.9	94.9	96.9	89.5	Canada	67.7	67.4	66.6	65.0	66.8	69.8	69.8
31.2	31.3	32.7	34.9	35.4	34.7	33.8	Denmark	69.2	69.5	70.4	72.2	72.9	72.8	73.4
74.6	—	—	—	—	89.8	—	Finland	80.5	—	—	—	—	81.8	—
67.6	66.5	65.2	65.8	66.7	68.2	70.0	France	73.0	74.8	75.2	77.1	78.8	79.7	81.5
52.3	52.9	53.8	53.6	42.1	46.3	44.6	West Germany (former)	82.6	83.1	84.1	82.8	67.4	80.8	81.1
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
68.1	70.1	71.2	75.0	73.3	74.6	78.9	Ireland	56.2	57.5	59.1	60.2	61.9	63.9	66.7
51.4	—	—	—	—	—	—	Italy	44.3	—	—	—	—	—	—
—	92.2	90.5	90.4	91.2	91.4	92.8	Japan	—	89.7	89.4	88.1	87.6	—	—
—	60.0	60.6	59.5	55.6	—	—	Luxembourg	—	65.2	65.6	66.5	65.5	—	—
41.6	41.0	42.7	43.0	44.2	44.9	45.9	Netherlands	55.2	54.8	56.2	56.1	56.9	58.0	59.1
67.0	65.1	70.8	74.5	77.4	79.2	83.5	New Zealand	32.9	34.0	39.1	43.5	49.8	52.7	57.2
82.6	84.3	85.0	84.9	86.7	90.3	90.6	Norway	75.3	75.3	74.2	72.4	76.2	82.4	84.7
—	—	—	—	—	—	42.2	Portugal	—	—	—	—	—	—	49.0
58.0	60.1	60.8	64.7	68.2	70.3	73.5	Spain	50.7	51.8	53.4	56.3	59.2	61.8	63.9
86.7	87.6	85.0	84.2	83.5	83.2	82.9	Sweden	82.3	84.8	85.3	86.1	85.4	84.7	85.3
57.9	58.1	58.4	59.2	59.7	61.7	61.2	Switzerland	78.5	79.1	79.3	79.8	80.8	81.5	81.8
21.1	22.5	23.7	23.9	25.3	26.5	28.2	Turkey	13.1	14.7	15.4	16.2	17.0	16.9	17.8
48.7	49.4	49.5	52.6	55.5	58.2	62.4	United Kingdom	30.9	31.1	32.5	32.5	36.1	39.7	43.1
84.5	85.4	86.4	83.4	85.3	84.0	83.4	United States	78.3	75.8	74.8	74.7	78.6	77.4	73.5
61.2	61.7	62.4	63.6	64.2	65.6	66.3	Average for countries reporting data for 7 years	60.4	61.0	61.8	62.5	63.4	65.9	67.1

— No data were reported or data were incomplete or inconsistent.

[1]Enrollment rates are based on full-time enrollments.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992*

Table 4 (continued)

Enrollment rates in upper secondary education: 1985–1991[1]

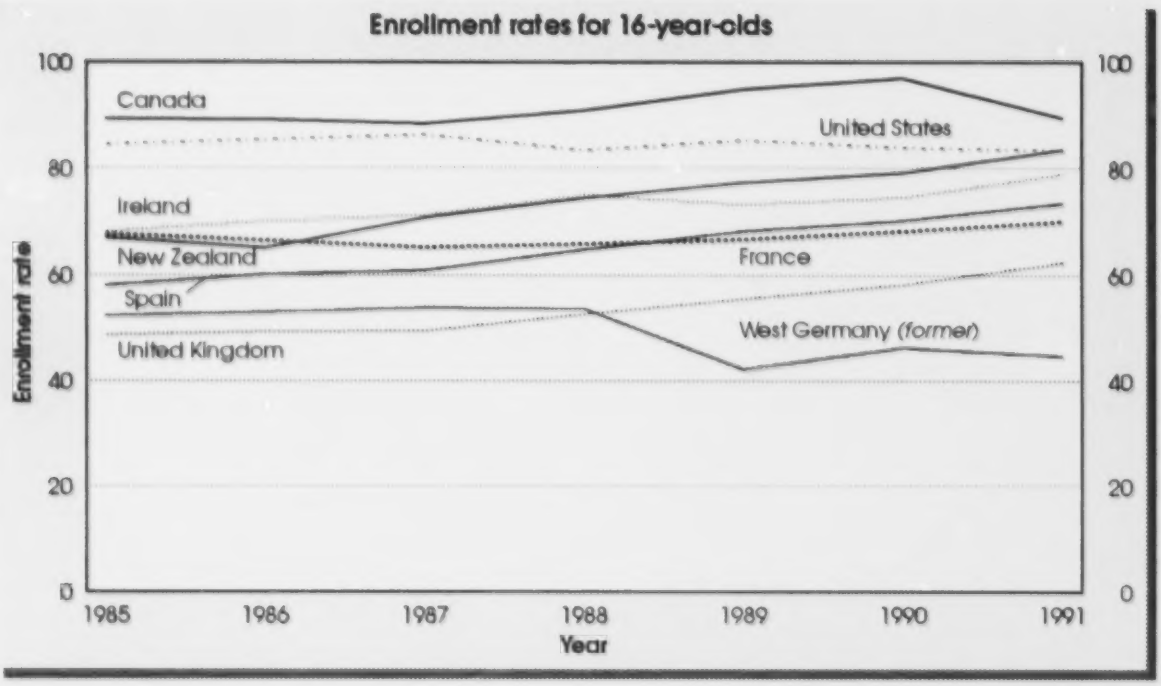
Enrollment rates for 18-year-olds								Enrollment rates for 19-year-olds						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	11.4	Australia	—	—	—	—	—	—	2.0
42.9	—	—	—	—	—	—	Austria	13.6	—	—	—	—	—	—
40.4	41.5	41.8	43.8	—	—	46.6	Belgium	17.9	19.4	19.3	20.6	—	—	22.9
31.0	31.3	30.8	31.9	31.4	32.2	35.5	Canada	9.4	9.0	9.0	9.1	8.9	8.5	11.1
64.1	65.6	66.9	67.4	67.8	66.4	67.2	Denmark	44.5	47.0	48.7	49.3	49.9	47.1	46.1
65.2	—	—	—	—	68.8	—	Finland	21.8	—	—	—	—	23.2	—
39.6	43.0	45.8	49.0	52.5	54.2	56.3	France	14.8	17.2	20.0	23.2	26.6	28.8	31.4
75.1	77.7	77.8	76.1	—	78.0	78.5	West Germany (former)	45.5	47.3	48.5	49.0	—	53.4	53.5
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
20.9	21.8	22.5	23.3	24.8	29.1	30.0	Ireland	3.7	4.1	4.4	4.5	5.3	—	—
33.8	—	—	—	—	—	—	Italy	10.2	—	—	—	—	—	—
—	1.7	1.8	1.9	1.9	1.9	1.8	Japan	—	—	—	—	—	—	—
—	49.7	53.1	54.2	54.7	—	—	Luxembourg	—	27.9	29.5	32.0	31.7	—	—
43.6	45.2	45.6	45.7	46.6	47.4	48.7	Netherlands	24.9	27.7	27.0	27.5	27.9	28.7	29.6
6.4	6.2	8.0	8.9	11.2	12.4	14.5	New Zealand	2.2	1.6	1.9	2.2	3.2	4.0	5.2
60.2	60.0	58.7	59.1	60.6	72.0	74.2	Norway	—	—	—	—	—	31.8	33.5
—	—	—	—	—	—	32.9	Portugal	—	—	—	—	—	—	19.6
26.6	27.5	28.3	29.9	30.6	33.1	34.6	Spain	14.0	14.8	15.1	16.4	17.0	18.6	19.6
45.9	45.7	48.0	49.3	50.3	51.0	54.7	Sweden	10.2	9.5	9.7	9.3	9.1	9.0	10.0
72.9	73.6	74.0	74.3	74.9	75.1	75.0	Switzerland	49.1	49.7	50.3	50.3	50.1	49.9	50.2
8.9	7.7	8.6	8.5	9.3	8.9	9.3	Turkey	4.6	4.7	4.1	4.2	5.9	6.2	5.8
8.7	8.9	9.0	9.3	9.5	11.0	12.3	United Kingdom	2.3	2.2	2.4	2.6	2.6	2.9	3.4
18.5	17.2	20.3	18.8	21.1	21.7	20.5	United States	3.2	3.9	3.7	4.4	4.0	4.4	4.8
34.4	34.9	35.9	36.6	37.7	39.6	41.0	Average for countries reporting data for 7 years	14.1	14.7	15.1	15.6	16.2	18.5	19.3

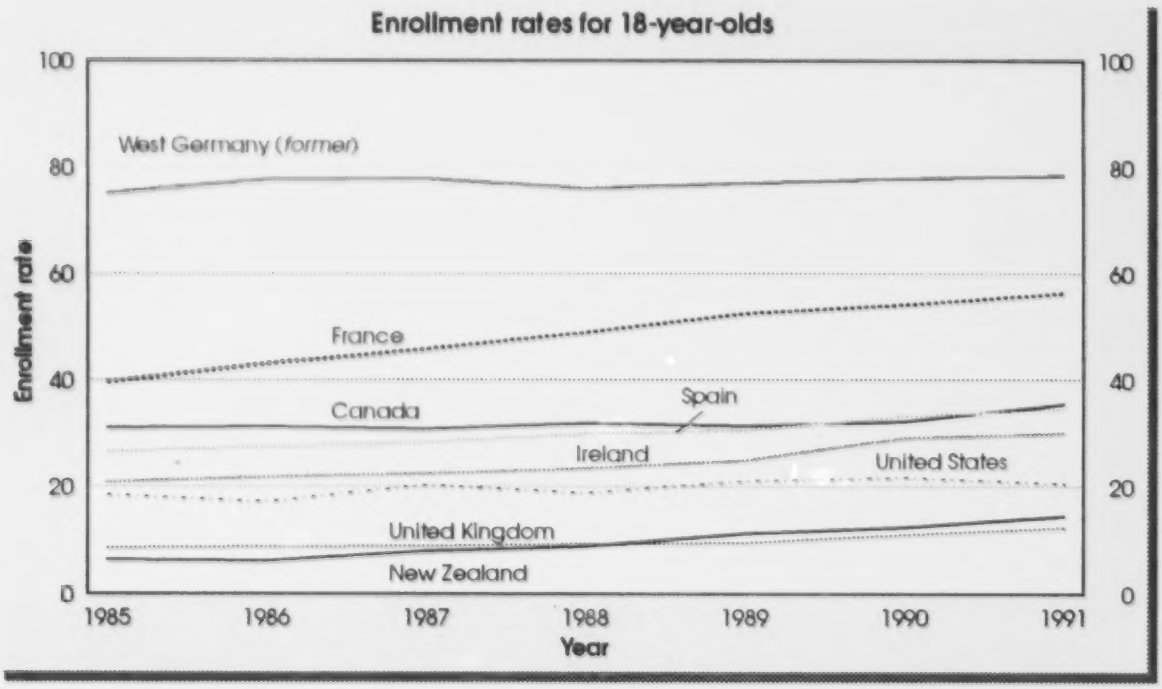
— No data were reported or data were incomplete or inconsistent.

[1]Enrollment rates are based on full-time enrollments.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 4 – Enrollment rates in upper secondary education: 1985–1991





SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 5: Enrollment Rates in Tertiary Education

Tertiary education includes both university and non-university institutions in both the public and private sectors. Two factors determine whether a student will enter tertiary education: choice and access. Whether a student chooses to attend tertiary education could depend on the diversity of programs the higher education institutions offer, the value the culture places on higher education, and the need for more advanced skills in the workforce. The accessibility of tertiary education once again reflects the value the culture places on such education and its willingness to fund the institutions and support a student entering a higher education program. Differences across countries may reflect different value systems or the different roles played by the higher education institutions. Differences across time also may reflect different economic circumstances.

- Between 1985 and 1991, enrollment rates in tertiary education increased across all age groups for nearly all the OECD countries with data available; and some of the largest gains occurred for 18- to 21-year-olds.

- In the period between 1985 and 1991, the United States consistently reported the highest enrollment for 18- to 21-year-olds in tertiary education of all OECD countries, with enrollment rates between 33 and 38 percent. However, several countries showed larger increases in their enrollment rates over this period, including New Zealand, France, and Spain.

- Enrollment rates of 22- to 25-year-olds increased between 1985 and 1991 in all OECD countries reporting data. The largest increases in percentage rates were in New Zealand, Norway, and Spain. Among the G-7 countries, the increase was between 2 and 3 percentage points in Canada, France, and the United States, and just under 1 percentage point in the former West Germany.

- Enrollment rates in tertiary education were lower for 26- to 29-year-olds than for 22- to 25-year-olds in all OECD countries with available data. However, for the majority of the countries with data available, enrollment rates of 26- to 29-year-olds increased between 1985 and 1991, with the largest increases in Norway, Switzerland, and the former West Germany. Only the Netherlands showed a substantial decline at this age level.

Table 5

Enrollment rates in tertiary education (public and private): 1985–1991[1]

Enrollment rates: 18- to 21-year-olds								Enrollment rates: 22- to 25-year-olds						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	28.9	Australia	—	—	—	—	—	—	11.6
—	—	—	—	—	—	—	Austria	—	—	—	—	—	—	—
24.5	25.3	25.7	27.2	—	—	30.4	Belgium	7.2	7.6	7.9	8.0	—	—	9.1
25.5	26.4	27.0	27.7	28.4	28.9	29.7	Canada	9.5	9.9	10.4	10.7	11.0	11.4	12.2
7.4	7.2	7.3	7.6	7.5	7.4	8.2	Denmark	16.3	16.2	16.3	16.4	16.9	17.9	18.3
9.3	—	—	—	—	13.6	—	Finland	17.3	—	—	—	—	20.7	—
19.4	20.4	21.1	22.1	23.7	24.6	26.6	France	10.0	10.1	10.1	10.4	10.8	11.8	12.7
8.8	8.5	8.2	7.8	8.1	8.5	9.1	West Germany (former)	15.5	15.5	15.4	15.4	15.5	15.9	16.3
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
15.2	16.3	16.7	17.2	18.9	20.3	20.5	Ireland	2.8	3.1	3.2	3.5	4.0	4.3	4.3
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
—	27.5	27.5	28.2	—	—	—	Japan	—	4.9	4.9	4.9	—	—	—
—	2.6	2.7	3.2	3.3	—	—	Luxembourg	—	1.1	1.3	1.4	1.3	—	—
14.4	14.6	15.1	15.9	16.7	17.9	19.1	Netherlands	11.9	11.9	12.0	12.4	12.6	13.4	14.5
14.9	16.0	19.5	19.9	21.2	20.8	23.2	New Zealand	9.6	10.9	13.8	13.5	16.4	13.8	16.1
8.6	8.8	9.4	9.9	11.5	13.6	14.5	Norway	13.9	13.3	14.9	15.1	15.5	17.4	18.9
5.8	4.8	5.3	—	—	—	11.3	Portugal	5.4	4.8	6.4	—	—	—	6.6
14.9	16.2	17.1	18.5	19.9	21.2	21.5	Spain	10.6	11.3	11.6	12.2	12.5	13.5	14.2
7.9	7.8	8.3	8.4	8.5	8.7	9.3	Sweden	11.3	11.1	11.1	11.1	11.2	11.4	11.8
5.7	5.6	5.7	5.8	6.0	6.4	6.6	Switzerland	10.6	10.6	11.0	11.1	11.5	12.1	12.8
—	—	—	6.1	6.7	7.4	7.9	Turkey	—	—	—	2.7	4.0	4.6	4.9
—	—	11.3	11.6	15.2	16.1	17.6	United Kingdom	—	—	—	—	4.5	4.7	6.2
33.0	33.9	34.5	37.8	37.3	36.2	36.4	United States	14.5	13.8	14.7	14.8	15.5	17.1	16.7
14.6	15.1	15.8	16.5	17.3	17.9	18.7	Average for countries reporting data for 7 years	11.4	11.5	12.0	12.2	12.8	13.3	14.1

— No data were reported or data were incomplete or inconsistent.

[1]Enrollment rates are based on full-time and part-time enrollments.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 5 (continued)

Enrollment rates in tertiary education (public and private): 1985–1991[1]

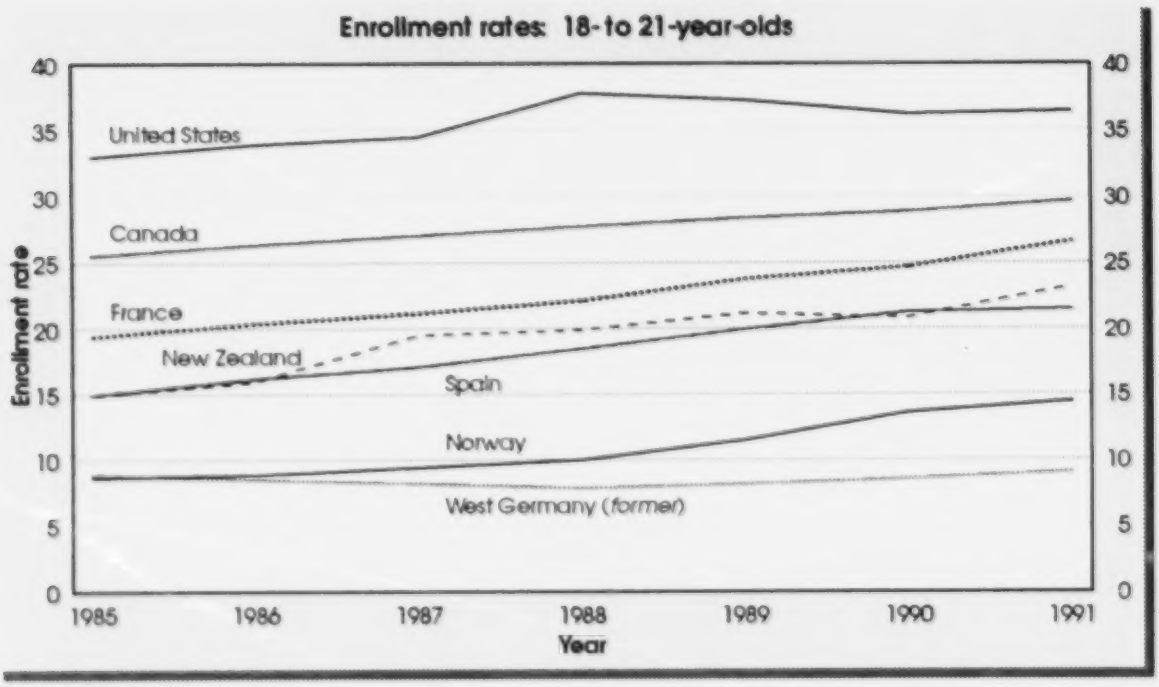
Enrollment rates: 26- to 29-year-olds								Enrollment rates: 18- to 29-year-olds						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	7.6	Australia	—	—	—	—	—	—	16.1
—	—	—	—	—	—	—	Austria	—	—	—	—	—	—	—
1.5	1.5	1.5	1.5	—	—	1.7	Belgium	11.1	11.3	11.6	11.8	—	—	13.0
3.0	3.1	3.2	3.2	3.3	3.4	3.5	Canada	12.5	12.7	12.8	13.0	13.3	13.7	14.2
8.2	8.1	8.2	8.4	8.5	9.3	9.5	Denmark	10.5	10.5	10.6	10.9	11.2	11.8	12.2
7.9	—	—	—	—	10.2	—	Finland	11.5	—	—	—	—	14.9	—
4.3	4.2	4.0	3.9	3.9	3.9	4.0	France	11.4	11.6	11.8	12.1	12.8	13.5	14.5
8.9	9.2	9.4	9.9	10.2	10.4	10.6	West Germany (former)	11.1	11.1	11.1	11.1	11.4	11.8	12.2
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
—	—	—	—	—	—			—	—	—	—	—	—	—
—	—	—	—	—	—	—	Ireland	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
—	0.1	0.1	0.1	—	—	—	Japan	—	11.3	11.4	11.6	—	—	—
—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—
5.7	5.6	5.5	5.5	4.9	4.7	4.7	Netherlands	10.7	10.8	10.9	11.3	11.4	11.9	12.6
—	—	—	—	—	—	—	New Zealand	—	—	—	—	—	—	—
6.2	5.7	6.9	6.5	6.7	7.4	8.2	Norway	4.6	9.2	10.4	10.5	11.3	12.9	13.9
2.3	2.0	2.7	—	—	—	2.2	Portugal	4.6	3.9	4.9	—	—	—	6.4
4.0	4.3	4.2	4.3	4.2	4.5	5.3	Spain	10.2	10.9	11.2	11.9	12.4	13.2	13.7
6.5	6.4	6.3	6.3	6.2	6.1	6.2	Sweden	8.5	8.4	8.6	8.7	8.7	8.8	9.1
5.2	5.4	5.6	5.8	6.1	6.4	7.0	Switzerland	7.1	7.2	7.5	7.6	7.9	8.4	8.8
—	—	—	1.9	1.8	2.3	2.1	Turkey	—	—	—	3.7	4.4	4.9	5.2
—	—	—	—	—	—	3.4	United Kingdom	—	—	—	—	—	—	8.8
8.2	8.1	8.3	7.5	7.5	8.5	9.1	United States	18.2	18.0	18.4	19.1	19.3	20.1	20.4
6.0	6.0	6.1	6.1	6.1	6.5	6.8	Average for countries reporting data for 7 years	11.0	11.0	11.3	11.6	12.0	12.6	13.2

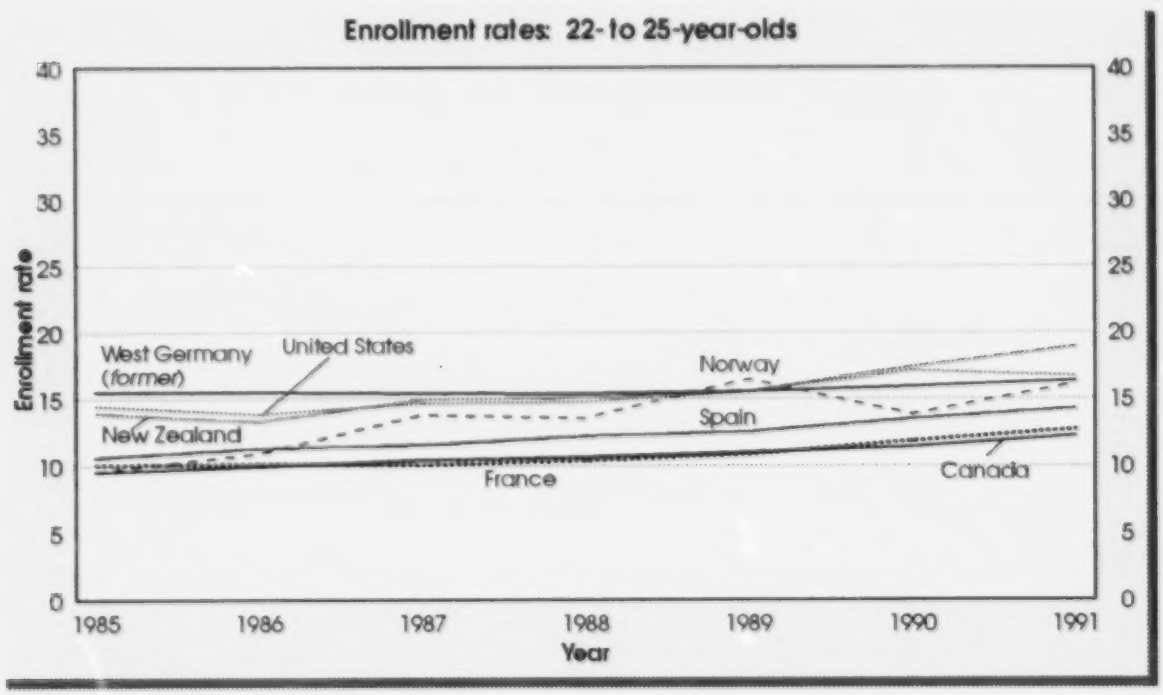
— No data were reported or data were incomplete or inconsistent.

[1]Enrollment rates are based on full-time and part-time enrollments.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 5 – Enrollment in tertiary education (public and private): 1985–1991





SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

HUMAN AND FINANCIAL RESOURCES

Indicator 6: Student-Teacher Ratios (in the Public Sector)

The student-teacher ratio indirectly measures students' access to teachers' guidance and help in school. A lower student-teacher ratio means easier availability of teachers' guidance. There is a great deal of cross-country variation in student-teacher ratios. Although this variation may reflect the relative willingness of each country to devote human resources to education in relation to the size of its student population,[3] it may also reflect differences in geographical areas and population density. From 1985 to 1991, within-country variations in student-teacher ratios have also occurred, and indicate possible future movement in student-teacher ratios.

- Student-teacher ratios at the primary level declined between 1985 and 1991 in the majority of countries with available data. While student-teacher ratios decreased most in Spain — about 7 students per teacher, they also decreased slightly in Italy, New Zealand, Denmark, and the United States. However, the ratio increased by over 2 students per teacher in the United Kingdom.

- At the lower secondary level, student-teacher ratios declined or were stable between 1985 and 1991 in all countries reporting data except Turkey. Among the G-7 countries, the largest decline was in the former West Germany. Ratios declined slightly in Canada and the United States, but were stable throughout the period in the United Kingdom.

- Turkey consistently reported higher student-teacher ratios at the lower secondary level than all other OECD countries with data available. In addition, the ratio for Turkey rose between 1985 and 1991.

- Student-teacher ratios at the upper secondary education level decreased in all OECD countries reporting data between 1985 and 1991, except for Ireland and Turkey. In the United States the ratio declined from 16.2 in 1985 to 15.6 in 1991, which is still slightly larger than the average of all OECD countries.

- For the majority of countries reporting data, student-teacher ratios at the overall secondary education level declined between 1985 and 1991 and remained lower than those at the primary education level. Among the G-7 countries, the decline was largest in the former West Germany, followed by Italy and the United States. Spain and Sweden also showed large declines.

[3]Tables in the Supplementary Notes and Tables section show the absolute change between 1985 and 1991 in the number of students (Table S2) and the number of teachers (Table S3).

Table 6

Student-teacher ratio (in the public sector): 1985–1991

Primary education								Lower secondary education						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
13.8	13.5	13.4	13.7	—	—	18.0	Australia	—	—	—	—	—	—	—
11.3	11.2	11.1	11.3	11.5	11.6	11.6	Austria	9.2	8.9	8.4	8.1	7.9	7.7	7.6
—	—	—	—	—	—	9.3	Belgium	—	—	—	—	—	—	—
18.1	17.8	18.0	17.4	16.9	17.1	—	Canada	16.0	15.6	15.7	15.5	15.5	15.5	—
12.7	12.5	12.0	11.6	12.2	11.2	11.1	Denmark	10.2	9.7	9.4	9.2	8.4	9.3	9.2
—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—
—	—	—	—	—	—	22.7	France	—	—	—	—	—	—	—
20.7	20.2	20.0	20.0	20.3	20.3	21.4	West Germany (former)	16.9	16.0	15.4	15.0	14.7	14.6	14.8
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
—	—	—	—	—	—	—		—	—	—	—	—	—	—
—	—	—	—	—	—	—	Ireland	—	—	—	—	—	—	—
12.8	12.2	11.6	11.1	10.8	10.7	10.9	Italy	9.6	9.5	9.4	8.9	8.7	8.5	8.3
—	—	—	—	21.5	20.8	20.3	Japan	—	—	—	—	19.4	18.6	17.7
—	—	—	13.6	13.7	—	—	Luxembourg	—	—	—	—	—	—	—
20.2	18.2	18.7	20.8	19.2	19.2	19.0	Netherlands	12.7	12.5	11.2	12.0	12.6	12.4	10.2
20.1	19.6	20.1	19.8	19.7	19.1	18.4	New Zealand	—	—	—	—	—	—	—
—	—	—	—	—	—	10.7	Norway	—	—	—	—	—	—	8.7
—	—	—	—	—	—	13.3	Portugal	—	—	—	—	—	—	—
26.8	25.9	25.3	24.5	22.9	21.2	19.7	Spain	21.4	21.1	20.6	20.5	19.5	18.8	17.8
11.6	11.3	11.1	11.0	10.7	10.6	10.4	Sweden	10.8	11.0	11.0	10.8	10.6	10.2	9.7
—	—	—	—	—	—	—	Switzerland	—	—	—	—	—	—	—
31.1	31.2	31.0	31.2	30.7	30.6	30.5	Turkey	41.3	43.0	45.3	47.7	50.0	48.4	49.7
19.7	19.7	22.0	22.1	22.0	22.0	22.2	United Kingdom	—	—	18.6	18.6	18.5	18.5	18.6
17.0	16.6	16.1	15.9	15.6	15.6	15.5	United States	16.5	16.3	16.4	16.0	16.0	15.9	16.1
18.5	18.1	18.1	18.1	17.8	17.5	17.3	Average for countries reporting data for 7 years	16.5	16.4	16.3	16.5	16.5	16.2	15.9

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992*.

Table 6 (continued)

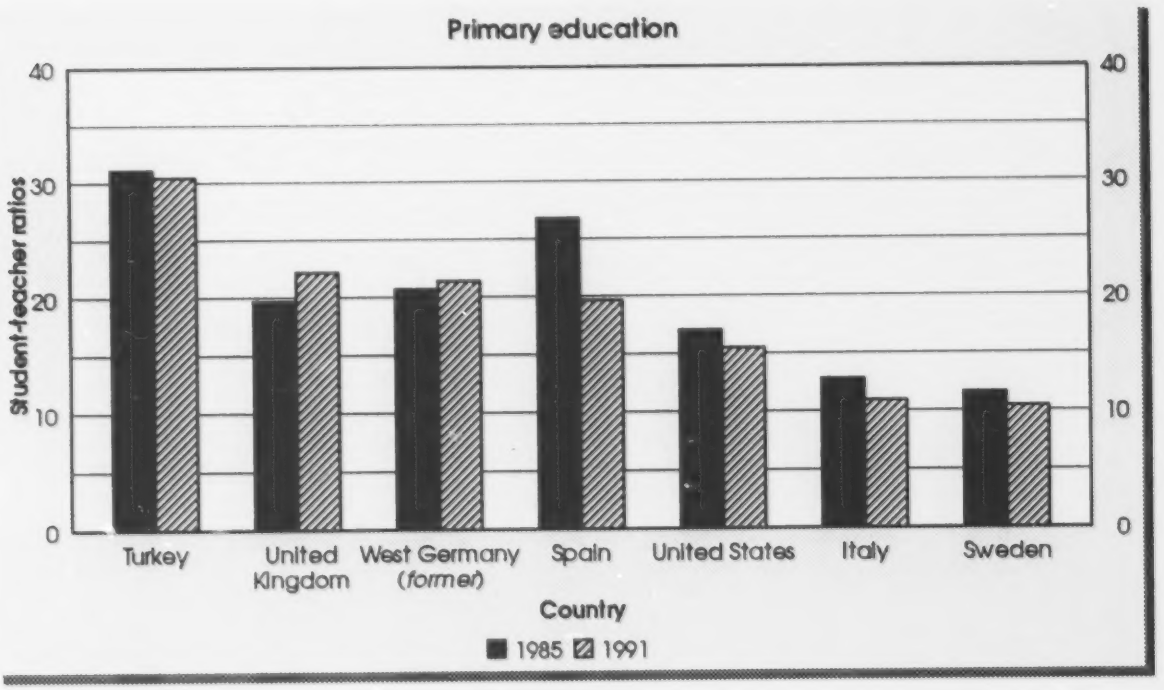
Student-teacher ratio (in the public sector): 1985–1991

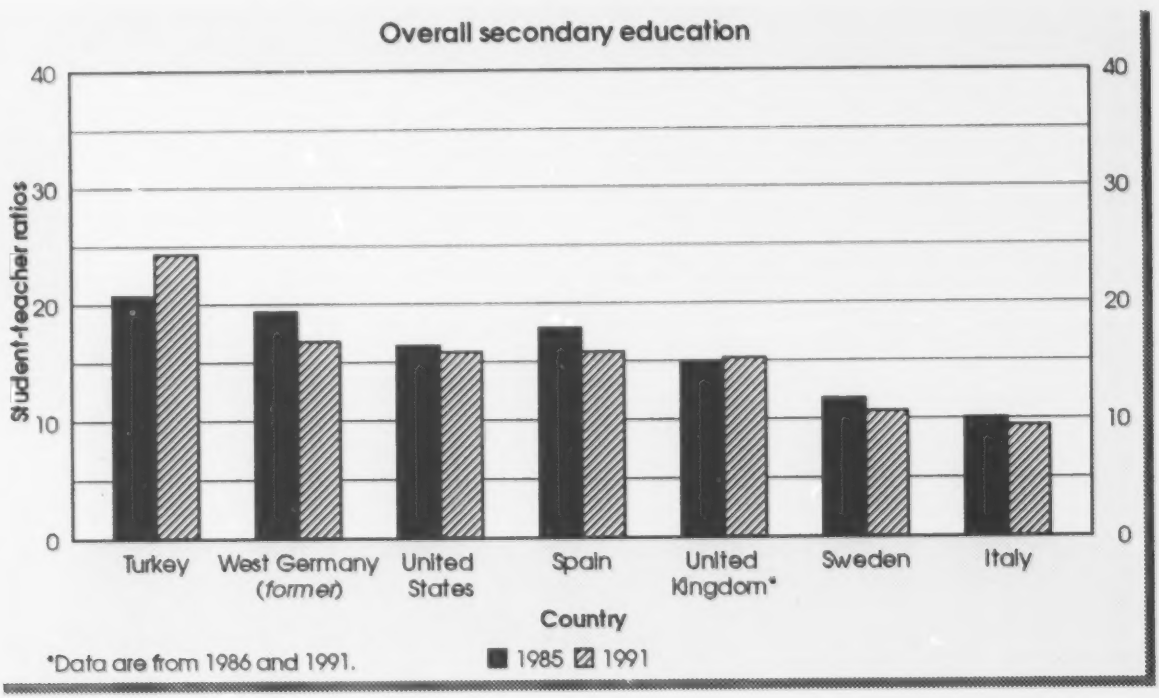
Upper secondary education							Country	Overall secondary (lower and upper secondary)						
1985	1986	1987	1988	1989	1990	1991		1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	—	Australia	—	14.3	14.5	14.5	—	—	—
15.2	14.6	14.6	13.1	12.6	12.4	11.9	Austria	11.5	11.2	10.8	10.2	9.9	9.6	9.4
—	—	—	—	—	—	4.6	Belgium	—	—	—	—	—	—	6.8
16.0	15.6	15.7	15.5	15.5	15.3	—	Canada	16.0	15.6	15.7	15.5	15.5	15.4	—
14.8	14.8	14.7	14.1	13.6	13.3	12.6	Denmark	12.0	11.6	11.4	11.1	10.4	10.9	10.7
—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—
—	—	—	—	—	—	5.6	France	—	—	—	—	—	—	13.6
23.7	23.6	22.9	22.3	21.9	21.0	20.4	West Germany (former)	19.3	18.8	18.2	17.7	17.3	16.9	16.8
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
7.2	7.2	7.2	7.5	8.0	8.3	8.6	Ireland	17.4	17.2	17.0	17.3	17.8	17.7	17.8
10.8	10.7	10.6	9.8	10.7	10.7	10.5	Italy	10.1	10.0	9.9	9.3	9.7	9.6	9.5
—	—	—	—	16.4	16.2	16.2	Japan	—	—	—	—	18.0	17.5	17.0
—	—	—	—	—	—	—	Luxembourg	—	10.7	10.1	9.8	9.5	—	—
—	—	—	—	—	—	—	Netherlands	19.8	19.8	18.1	20.3	20.4	—	17.0
10.8	10.1	10.7	11.0	10.9	10.2	10.7	New Zealand	21.5	19.5	20.4	20.5	19.8	19.0	19.7
—	—	—	—	—	—	8.1	Norway	—	—	—	—	—	—	8.4
—	—	—	—	—	—	—	Portugal	—	—	—	—	—	—	—
15.3	15.3	15.5	15.6	15.1	14.8	14.7	Spain	17.9	17.7	17.6	17.6	16.8	16.3	15.8
13.1	12.8	12.7	12.5	12.2	11.9	11.9	Sweden	11.7	11.8	11.7	11.5	11.3	10.9	10.6
—	—	—	—	—	—	—	Switzerland	—	—	—	—	—	—	—
11.0	11.3	11.6	11.8	12.2	12.1	13.1	Turkey	20.7	21.3	21.9	22.5	23.7	23.0	24.3
—	—	13.6	13.5	—	13.9	13.7	United Kingdom	—	14.8	15.2	15.1	—	15.3	15.3
16.2	16.1	16.2	16.4	16.0	15.8	15.6	United States	16.4	16.2	16.3	16.2	16.0	15.9	15.9
13.8	13.7	13.7	13.4	13.3	13.1	13.0	Average for countries reporting data for 7 years	15.8	15.5	15.5	15.4	15.3	15.0	15.1

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 6 – Student-teacher ratios (in the public sector): 1985–1991





SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1991.*

Indicator 7: Public Expenditures on Education as a Percentage of GDP

Gross Domestic Product is an aggregate measure of the value of goods and services produced in a country. The percentage of the GDP spent on education from public sources reflects the value a country places on education, as well as differences in income; it is not a measure of total expenditures on education, since private investments are not included. Examining how education resources are divided among the various levels may provide an indicator of the relative importance each country places on the different *levels* of education. Changes over time may reflect different economic circumstances, or a shift in priorities.

- In each year from 1985 to 1991, public expenditures for all education levels varied between 3.5 and 7 percent of GDP in all OECD countries with available data. Over this period, public expenditures as a percentage of GDP increased in several countries, including Norway, Portugal, Spain, and the United States. Australia showed a large decrease on this indicator between 1985 and 1989, and Belgium showed a similar decrease between 1985 and 1990.

- At the primary level, the percentage of GDP spent on education changed very little in most countries between 1985 and 1991. Sweden and Portugal consistently reported the highest rate of public expenditures at over 2 percent of GDP. The United States showed a moderate increase in the percentage of GDP spent on primary education from 1985 to 1991.

- In most OECD countries with available data, public expenditures on education as a percentage of GDP were higher at the secondary level than at either the primary or tertiary levels. As with primary education, public expenditures for secondary education changed very little between 1985 and 1991 in most OECD countries reporting data. Portugal and Spain showed the most marked increases of 0.8 and 0.6 percentage points, respectively. The only countries with a significant decrease in the percentage of GDP spent on education at the secondary level were Australia (between 1985 and 1991) and Belgium (between 1985 and 1990).

- The percentage of GDP spent on education at the tertiary level increased slightly between 1985 and 1991. The majority of OECD countries with available data showed very small changes in tertiary expenditures as a percentage of GDP during this period. However, Spain doubled its public expenditures on education as a percentage of GDP, rising from 0.4 to 0.8, and Norway increased its expenditures from 0.8 to 1.3 percent of GDP.

Table 7

Public expenditures on education as a percentage of GDP: 1985–1991

Primary level								Secondary level						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
1.8	1.7	1.6	1.6	—	—	1.5	Australia	2.1	2.0	1.9	1.9	—	—	1.5
1.0	1.0	1.0	1.0	0.9	0.9	1.0	Austria	2.8	2.8	2.8	2.7	2.6	2.5	2.6
1.1	1.1	1.0	1.0	0.9	0.9	—	Belgium	3.0	2.8	2.6	2.5	2.5	2.3	—
—	—	—	—	—	—	—	Canada	—	—	—	—	—	—	—
1.7	1.6	1.7	1.7	1.7	1.7	1.7	Denmark	2.8	2.7	2.9	2.9	2.9	2.7	2.7
—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
0.6	0.6	0.6	0.6	—	—	0.5	West Germany (former)	2.2	2.1	2.1	2.0	—	—	1.9
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
1.7	1.7	1.8	1.6	1.6	1.5	1.6	Ireland	2.4	2.4	2.5	2.3	2.2	2.1	2.2
1.2	1.1	1.1	1.1	1.2	1.1	—	Italy	2.0	2.2	2.2	2.2	2.3	2.2	—
—	—	—	—	—	—	—	Japan	—	—	—	—	—	—	—
—	1.8	2.1	2.1	2.0	—	—	Luxembourg	—	2.4	2.5	2.5	2.4	—	—
—	—	—	—	—	—	—	Netherlands	—	—	—	—	—	—	—
—	1.8	1.5	1.4	1.7	—	1.5	New Zealand	—	1.4	1.3	1.2	1.5	—	1.3
1.7	1.8	1.9	1.9	1.8	1.6	1.7	Norway	2.7	2.8	2.8	2.9	2.8	2.7	2.8
2.1	2.0	2.1	2.3	2.1	2.1	2.2	Portugal	1.2	1.2	1.3	1.4	1.6	1.6	2.0
1.2	1.1	1.1	1.1	1.1	1.0	1.0	Spain	1.8	1.8	1.9	2.1	2.2	2.3	2.4
—	2.2	2.2	2.2	2.0	2.0	2.2	Sweden	—	2.7	2.7	2.5	2.4	2.5	2.7
—	—	—	—	—	—	1.4	Switzerland	—	—	—	—	—	—	2.4
—	—	—	—	—	—	1.9	Turkey	—	—	—	—	—	—	1.0
1.2	1.2	1.3	1.3	1.3	1.3	1.3	United Kingdom	2.2	2.4	2.3	2.3	2.2	2.3	2.2
1.5	1.5	1.6	1.7	1.8	1.8	1.8	United States	1.9	1.9	1.9	1.9	1.9	2.0	2.0
1.5	1.5	1.6	1.6	1.5	1.5	1.5	Average for countries reporting data for 7 years	2.2	2.3	2.3	2.3	2.3	2.3	2.4

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 7 (continued)

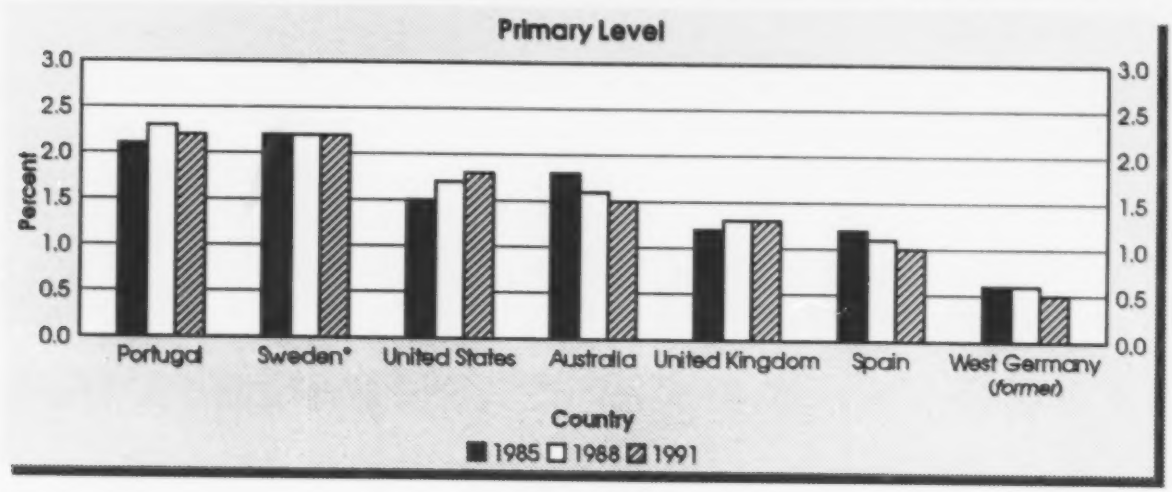
Public expenditures on education as a percentage of GDP: 1985–1991

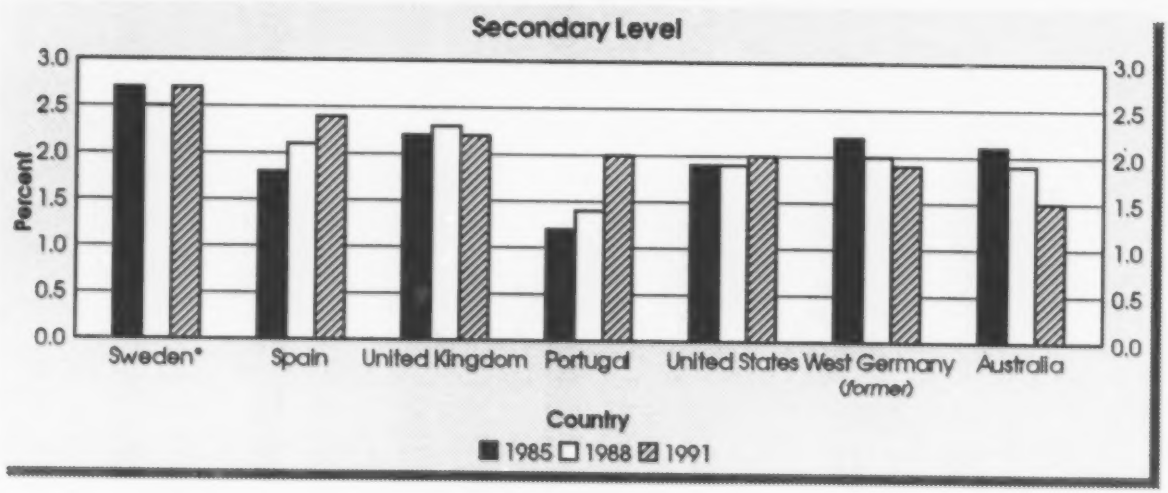
Tertiary level								All levels (including early childhood education)						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
1.8	1.8	1.8	1.8	—	—	1.5	Australia	6.0	5.8	5.6	5.5	—	—	4.6
1.0	1.2	1.1	1.1	1.1	1.1	1.1	Austria	5.7	5.9	5.7	5.5	5.3	5.2	5.4
1.0	1.0	1.0	0.9	0.9	0.9	—	Belgium	6.4	6.2	5.9	5.6	5.7	5.2	—
—	—	—	—	—	—	—	Canada	—	—	—	—	—	—	—
1.2	1.2	1.2	1.3	1.3	1.3	1.3	Denmark	6.2	5.9	6.2	6.4	6.4	6.2	6.1
—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
1.0	1.0	1.0	1.0	—	—	0.9	West Germany (former)	4.6	4.5	4.4	4.3	—	—	4.1
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
0.9	1.0	1.1	1.0	1.0	1.0	1.1	Ireland	5.9	6.1	6.2	5.6	5.3	5.2	5.4
0.6	0.7	0.7	0.8	0.7	1.0	—	Italy	4.7	4.8	4.8	4.9	5.0	5.2	—
—	—	—	—	—	—	—	Japan	—	—	—	—	—	—	—
—	0.2	0.2	0.2	0.2	—	—	Luxembourg	—	5.5	6.0	6.0	5.8	—	—
—	—	—	—	—	—	—	Netherlands	—	—	—	—	—	—	—
—	1.7	1.5	1.6	1.8	—	2.0	New Zealand	—	6.0	5.3	5.2	6.3	—	5.8
0.8	0.9	0.9	1.0	1.1	1.2	1.3	Norway	5.6	6.0	6.2	6.4	6.5	6.4	6.8
0.6	0.7	0.7	0.8	0.9	0.9	0.9	Portugal	—	4.1	4.3	—	4.8	4.8	5.5
0.4	0.4	0.5	0.6	0.6	0.7	0.8	Spain	3.6	—	3.7	3.9	4.2	4.4	4.5
—	1.0	1.0	1.0	0.9	1.1	1.1	Sweden	—	6.1	6.0	5.9	5.5	5.7	6.1
1.0	1.0	1.0	1.0	—	—	1.2	Switzerland	5.1	5.1	5.0	5.1	—	—	5.4
—	—	—	—	—	—	1.0	Turkey	—	—	—	—	—	—	4.0
1.1	1.0	1.0	0.9	0.9	0.9	1.0	United Kingdom	5.3	5.0	5.1	5.0	4.9	5.1	4.9
1.3	1.4	1.4	1.4	1.2	1.5	1.5	United States	5.0	5.1	5.2	5.2	5.1	5.6	5.7
0.9	1.0	1.0	1.0	1.0	1.1	1.1	Average for countries reporting data for 7 years	5.6	5.7	5.8	5.7	5.6	5.6	5.7

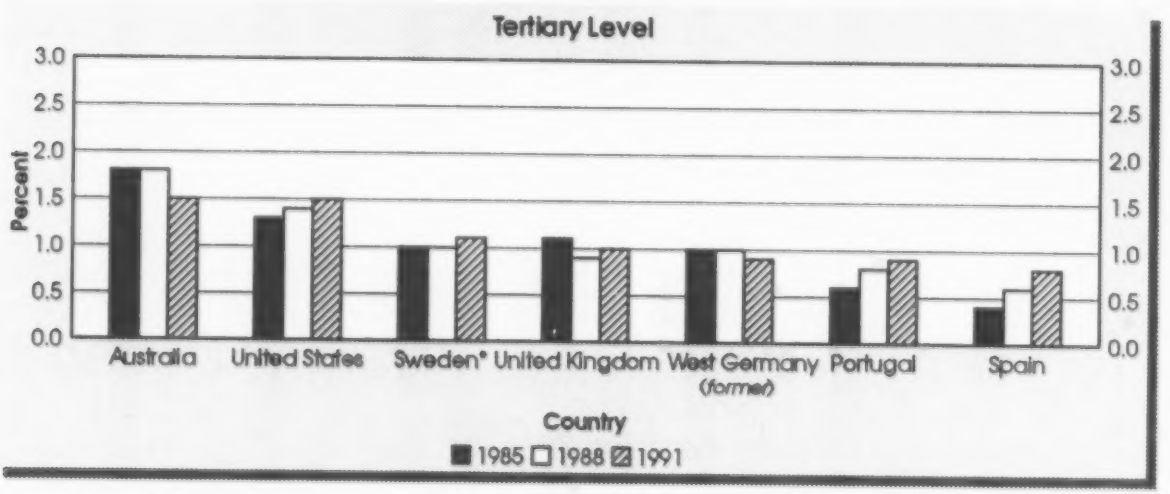
— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 7 – Public expenditures on education as a percentage of GDP: 1985–1991







*Data are from 1986, 1988, and 1991.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 8: Expenditures per Student from Public Sources (in Constant 1991 U.S. Dollars)

Expenditures per student from public sources measure how much public economic resources a country devotes to education. As an indicator, it reflects not only the wealth of a country, but also how much emphasis a country places on education, as well as the public cost of educating its students. Examining this indicator over a period of several years may reveal the future direction in which a country's per-student expenditures move. Similarly, comparing this indicator across OECD countries may indicate the relative priority each country places on education, and may reflect the different cost structures associated with national education systems.

- In most OECD countries for which data are available, per-student expenditures increase by education level. For example, in 1991, at the primary education level, the average per-student expenditures for all countries reporting data for seven years were about $3,200. The corresponding figures for secondary education and tertiary education were about $4,600 and $7,200, respectively.

- Except for Belgium and Denmark, from 1985 to 1991 expenditures per student increased at all education levels in all of the OECD countries reporting data. Expenditures per student decreased in Belgium at the primary and secondary levels, in Sweden at the pre-primary level, and in Denmark at the tertiary level.

- While pre-primary education had the lowest expenditures per student from public sources, its spending increased the most, with the OECD average rising almost 5 percent per year, from 1985 to 1991, after adjustment for inflation. Conversely, tertiary education showed the highest expenditures per student, but the lowest annual rate of increase (less than 2 percent between 1985 and 1991).

- The United States spent more per student than most other OECD countries reporting data during the period 1985 to 1991. In addition, expenditures per student increased at a faster rate than the OECD average. At the primary education level, the OECD average annual rate of increase in expenditures per student, after adjustment for inflation, was 2.8 percent, while for the United States the increase was 3.4 percent. At the secondary and tertiary education levels, the average OECD annual rates of increase were 2.4 and 1.7 percent, respectively, while the corresponding U.S. rates were 4.0 and 2.9 percent.

- Between 1985 and 1991, after adjustment for inflation, Spain showed the largest average annual rate of increase in expenditures per student compared to the other OECD countries at the pre-primary education level (12.3 percent), the secondary level (5.9 percent), and the tertiary level (9.8 percent). At the primary level, Spain's average annual rate of increase (4.9 percent) was second only to Portugal's (8.5 percent).

Table 8

Expenditures per student from public sources: 1985–1991[1]

(In constant 1991 U.S. dollars)[2]

Pre-primary								Country	Primary							
1985	1986	1987	1988	1989	1990	1991	AARG[3]		1985	1986	1987	1988	1989	1990	1991	AARG[3]
—	—	—	—	—	—	—	—	Australia	—	—	—	—	—	—	—	—
$2,304	$2,300	$2,209	$2,120	$2,188	$2,228	$2,400	0.7%	Austria	$3,350	$3,416	$3,499	$3,442	$3,392	$3,423	$3,573	1.1%
2,184	2,216	2,187	2,174	2,214	2,203	2,245	0.2% [5]	Belgium	2,166	2,151	2,086	2,074	2,059	2,069	2,142 [4]	-0.9% [5]
—	—	—	—	—	—	—	—	Canada	—	—	—	—	—	—	—	—
2,501	2,574	2,737	3,266	3,310	—	—	—	Denmark	3,466	3,434	3,8[illegible]7	4,011	4,074	4,316	4,397	4.0%
—	—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,163	—	France	—	—	—	—	—	—	2,591	—
—	—	—	—	—	—	—	—	West Germany (former)	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—	—
1,291	1,232	1,333	1,243	1,266	1,361	1,523	2.8%	Ireland	1,284	1,295	1,375	1,315	1,333	1,387	1,542	3.1%
—	—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Japan	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Netherlands	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	New Zealand	—	—	—	—	—	—	—	—
4,290	5,129	5,797	6,186	6,171	5,863	6,286	6.6%	Norway	3,304	3,772	4,148	4,264	4,137	3,765	3,885	2.7%
—	—	—	—	—	—	1,506	—	Portugal	1,291	1,330	1,454	1,768	—	1,875	2,110	8.5%
887	881	923	1,000	1,113	1,376	1,777	12.3%	Spain	1,397	1,401	1,455	1,599	1,750	1,748	1,861	4.9%
—	2,728	2,790	2,676	2,562	2,517	2,501	-1.7% [6]	Sweden	—	4,955	5,129	5,378	5,122	5,117	5,470	2.0% [6]
—	—	—	—	—	—	2,017	—	Switzerland	—	—	—	—	—	—	5,447	—
—	—	—	—	—	—	—	—	Turkey	—	—	—	—	—	—	565	—
1,679	1,992	2,104	2,149	2,164	2,101	2,233	4.9%	United Kingdom	2,268	2,416	2,582	2,652	2,712	2,813	2,794	3.5%
2,849	2,887	3,136	3,219	3,415	3,826	4,014	5.9%	United States	4,237	4,460	4,739	4,858	5,116	5,071	5,177	3.4%
2,212	2,377	2,527	2,584	2,647	2,708	2,925	4.8%	Average for countries reporting data for 7 years	2,684	2,793	2,963	3,027	3,072	3,074	3,171	2.8%

— No data were reported or data were incomplete or inconsistent.

[1]The number of students used to calculate expenditures per student from public sources is the number enrolled in public schools or in private schools that are predominantly publicly funded.

[2]Refer to the supplemental notes for a description of how expenditures per student are converted to constant (1991) U.S. dollars.

[3]"AARG" is the average annual rate of increase or decrease from 1985 to 1991.

[4]The figure for 1991 includes private as well as public expenditure.

[5]AARG calculated from 1985 to 1990.

[6]AARG calculated from 1986 to 1991.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 8 (continued)
Expenditures per student from public sources: 1985–1991[1]
(In constant 1991 U.S. dollars)[2]

Secondary								Country	Tertiary							
1985	1986	1987	1988	1989	1990	1991	AARG[3]		1985	1986	1987	1988	1989	1990	1991	AARG[3]
—	—	—	—	—	—	—	—	Australia	—	—	—	—	—	—	—	—
$3,828	$3,945	$4,129	$4,193	$4,320	$4,497	$4,680	3.4%	Austria	$6,365	$7,158	$6,758	$6,634	$6,519	$6,183	$6,441	0.2%
5,125	5,024	4,804	4,912	4,837	4,664	5,000 [4]	-1.9% [5]	Belgium	6,890	7,019	6,709	—	6,271	5,997	6,235 [4]	-2.7% [5]
—	—	—	—	—	—	—	—	Canada	—	—	—	—	—	—	9,645	—
4,897	4,848	5,132	5,330	5,383	5,146	5,378	1.6%	Denmark	8,319	8,517	8,099	8,549	8,569	8,089	7,685	-1.3%
—	—	—	—	—	—	—	—	Finland	—	—	—	—	—	—	—	—
—	—	—	—	—	—	4,640	—	France	—	—	—	—	—	—	4,760	—
—	—	—	—	—	—	—	—	West Germany (former)	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—	—
2,211	2,194	2,350	2,275	2,295	2,333	2,488	2.0%	Ireland	5,021	5,119	5,732	5,125	4,844	5,366	5,587	1.8%
—	—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Japan	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	Netherlands	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	New Zealand	—	—	—	—	—	—	—	—
4,676	5,097	5,350	5,514	5,519	5,002	5,376	2.4%	Norway	7,627	8,980	9,141	9,296	9,830	8,376	8,405	1.6%
1,707	1,749	1,811	1,836	—	—	2,364	5.6%	Portugal	3,623	4,823	6,084	6,798	6,630	—	6,161	9.3%
1,940	1,960	2,070	2,310	2,520	2,627	2,730	5.9%	Spain	1,851	1,953	2,245	2,407	2,694	3,064	3,242	9.8%
—	6,058	6,049	5,787	5,824	6,108	6,635	1.8% [6]	Sweden	—	—	—	—	7,257	8,416	8,561	8.6% [7]
—	—	—	—	—	–	6,563	—	Switzerland	—	—	—	—	—	—	14,682	—
—	—	—	—	—	—	504	—	Turkey	—	—	—	—	—	—	2,795	—
3,751	4,207	4,533	4,837	4,156	5,339	4,255	5.2%	United Kingdom	—	—	—	—	—	—	9,621	—
5,128	5,370	5,549	5,680	5,902	6,355	6,472	4.0%	United States	9,923	10,660	10,880	10,969	9,477	11,662	11,802	2.9%
3,972	4,062	4,198	4,316	4,396	4,375	4,589	2.4%	Average for countries reporting data for 7 years	6,518	7,064	7,143	7,163	6,989	7,123	7,194	1.7%

— No data were reported or data were incomplete or inconsistent.

[1]The number of students used to calculate expenditures per student from public sources is the number enrolled in public schools or in private schools that are predominantly publicly funded.

[2]Refer to the supplemental notes for a description of how expenditures per student are converted to constant (1991) U.S. dollars.

[3]"AARG" is the average annual rate of increase or decrease from 1985 to 1991.

[4]The figure for 1991 includes private as well as public expenditure.

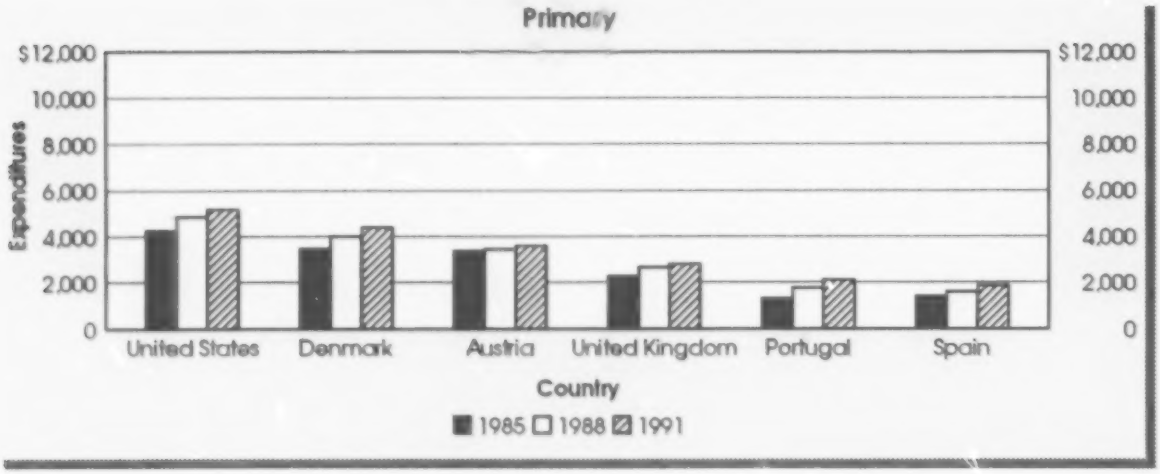
[5]AARG calculated from 1985 to 1990.

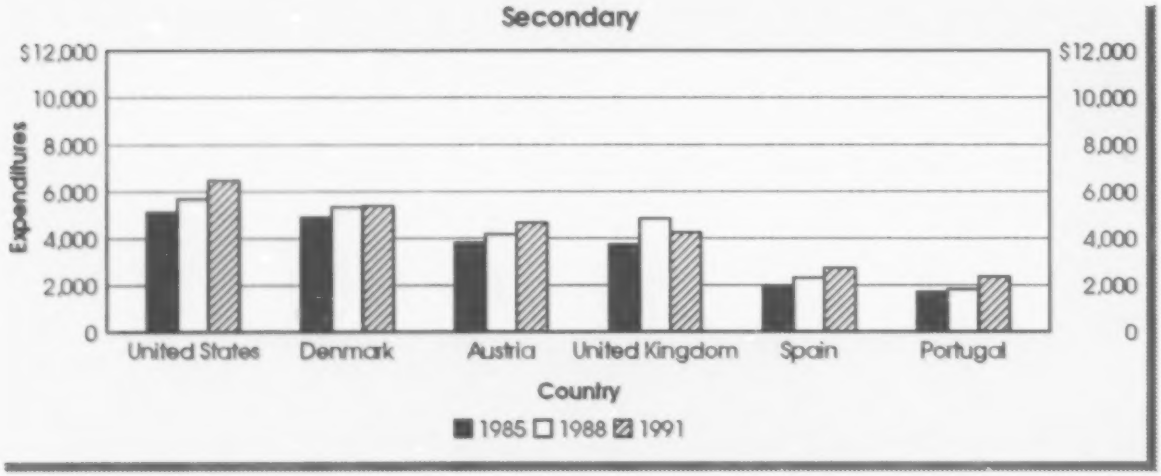
[6]AARG calculated from 1986 to 1991.

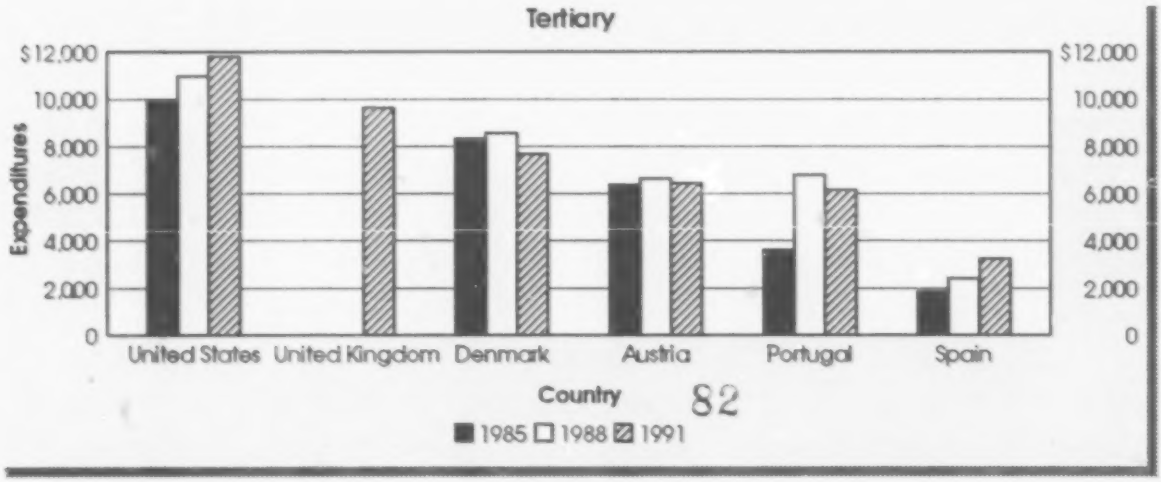
[7]AARG calculated from 1989 to 1991.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 8 – Expenditures per student from public sources: 1985–1991 (In constant 1991 U.S. dollars)[1]







[1]Refer to the supplemental notes for a description of how expenditures per student are converted to constant (1991) U.S. dollars.
SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

SYSTEM OUTCOMES

Indicator 9: First Degree Graduation Ratios

The first degree graduation ratio is the ratio of the number of students earning their first university degree (the equivalent of a bachelor's degree in the United States), per 100 persons, in the total population who are of the typical age of graduation. The first degree graduation ratio also can be expressed, in equivalent terms, as a percentage. For example, the typical graduation age from university education is 22 in many countries, including the United States, Canada, and Japan. If the number of students receiving their degree in a given year is divided by the number of people in the population who were 22 years-old at graduation time, and the result is multiplied by 100, the first degree graduation ratio is then expressed as a percentage. This ratio provides a broad indication of the proportion of the population of graduating age that received an advanced education, and indirectly measures the skills available to national economies. Differences in graduation ratios between men and women may reflect either their choices or the opportunities available to them, both within the university and in the workforce.

- Between 1985 and 1991, first degree graduation ratios increased in most OECD countries reporting data. The largest increases were found in Norway and Canada, with increases of 12.1 and 10.3 percentage points, respectively. Canada's increase was large enough to make it the country with the highest first degree graduation ratio of all OECD countries with data available in 1991.

- First degree graduation ratios also increased in the United States and France, but were relatively stable in the former West Germany and Japan. In 1991, the United States ranked third behind Norway and Canada in graduation ratios.

- First degree graduation ratios for women edged ahead of those for men between 1985 and 1991. In 1985 the average ratio for OECD countries reporting data for the seven years between 1985 and 1991 was 12.2 for women, compared to a ratio of 12.9 for men; in 1991, the average ratio for women was 17.4, and the ratio for men was 15.0.

- In the G-7 countries, first degree graduation ratios for women increased more than men's ratios in Canada, France, Italy, and the United States. In Japan, the ratio for women increased slightly, while the ratio for men showed a small decline.

- Graduation ratios for men have been increasing at a slower rate than those for women, and, in some countries, the ratios for men have fallen. The ratios for men in Sweden, Belgium, Japan, and the former West Germany were down 2.7, 1.4, 1.3, and 0.2, respectively.

Table 9

Graduation ratios in first-degree university education: 1985–1991[1] (gross ratios)

Country	Men and women combined						
	1985	1986	1987	1988	1989	1990	1991
Australia	—	—	18.6	19.8	20.8	—	24.4
Austria	6.7	6.5	6.8	7.2	6.7	7.8	7.8
Belgium	12.7	11.0	10.1	11.6	—	—	13.3
Canada	23.0	24.4	26.2	27.7	30.2	31.8	33.3
Denmark	10.2	10.1	10.3	10.1	12.9	15.0	16.5
Finland	14.6	15.0	14.9	—	16.9	17.0	17.1
France	11.5	11.4	12.2	12.8	13.9	14.9	16.3
West Germany (former)	13.5	13.3	13.3	13.5	13.2	12.9	13.3
Greece	—	—	—	—	—	—	—
Iceland	—	—	—	—	—	—	—
Ireland	14.0	15.9	16.0	17.5	16.3	17.5	16.0
Italy	7.6	7.7	7.4	7.8	8.6	8.8	9.2
Japan	23.6	23.4	23.1	21.5	—	21.8	23.7
Luxembourg	—	—	—	—	—	—	—
Netherlands	6.5	6.9	8.0	11.0	10.2	8.0	8.3
New Zealand	13.5	15.5	17.1	16.0	15.7	15.1	16.1
Norway	18.7	17.2	22.2	23.6	24.6	27.6	30.8
Portugal	6.4	5.4	6.5	—	—	—	—
Spain	14.1	14.7	15.9	16.9	17.8	18.5	19.7
Sweden	15.9	14.2	14.3	13.3	13.1	12.2	12.5
Switzerland	7.2	7.3	7.6	7.7	7.7	7.8	7.6
Turkey	3.6	4.4	5.5	5.8	6.3	6.5	6.5
United Kingdom	—	—	—	—	—	—	—
United States	23.2	24.1	25.4	26.5	27.8	28.1	28.1
Average for countries reporting data for 7 years	12.6	12.9	13.9	14.5	15.0	15.5	16.1

— No data were reported or data were incomplete or inconsistent.

[1]The graduation ratio relates the number of people with first-degrees to the number of people in the population corresponding to the typical age of graduation.

SOURCE: Organization for Economic Cooperation and Development (OECD). *Education Statistics, 1985-1992.*

Table 9 (continued)

Graduation ratios in first-degree university education: 1985-1991[1]

(gross ratios)

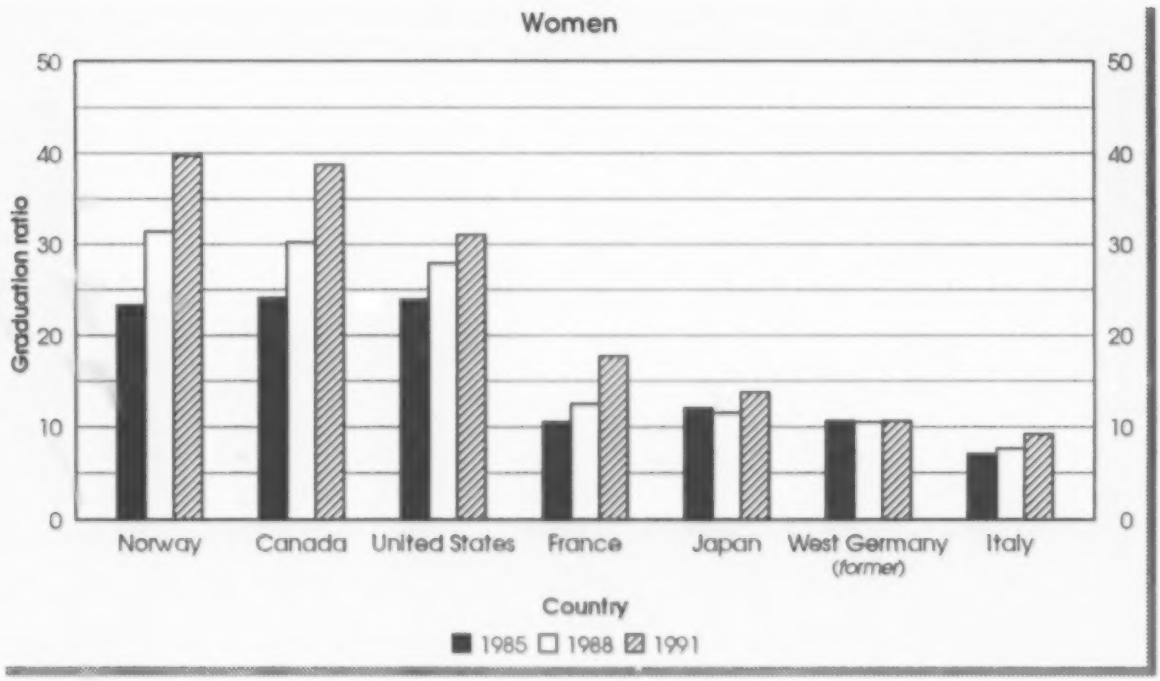
Women								Men						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	19.0	20.6	22.3	—	27.3	Australia	—	—	18.1	18.9	19.3	—	21.6
5.2	5.2	5.5	6.3	5.6	7.0	7.0	Austria	8.1	7.7	8.1	8.1	7.7	8.7	8.5
8.9	8.0	7.9	—	—	—	11.5	Belgium	16.4	13.8	12.2	—	—	—	15.0
24.1	25.9	28.4	30.2	33.5	36.0	38.7	Canada	21.9	22.8	24.0	25.3	26.9	27.6	28.2
8.8	8.1	7.8	7.4	14.4	16.8	18.7	Denmark	11.5	11.9	12.6	12.6	11.5	13.2	14.4
13.7	14.4	14.8	16.2	16.6	17.1	17.3	Finland	15.5	15.6	15.0	—	17.1	17.0	16.9
10.5	10.9	11.8	12.5	14.0	15.1	17.7	France	12.4	12.0	12.5	13.0	13.8	14.7	14.9
10.6	10.6	10.4	10.5	10.1	10.0	10.6	West Germany (former)	16.1	15.8	16.0	16.4	16.1	15.7	15.9
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
—	—	—	—	—	18.2	16.2	Ireland	—	—	—	—	—	16.9	15.8
7.0	7.2	7.2	7.6	8.4	8.7	9.2	Italy	8.2	8.3	7.6	8.1	8.7	9.0	9.1
12.0	11.9	12.2	11.5	—	12.3	13.7	Japan	34.8	34.6	33.6	31.2	--	30.9	33.5
—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—
4.1	4.6	5.6	8.7	7.9	6.5	6.9	Netherlands	8.8	9.2	10.3	13.2	12.3	9.4	9.6
11.4	13.6	15.6	14.7	15.0	14.6	15.8	New Zealand	15.5	17.4	18.6	17.2	16.4	15.7	16.5
23.3	21.2	29.7	31.4	31.6	36.2	39.7	Norway	14.4	13.3	15.0	16.3	18.1	19.3	22.3
6.5	6.0	7.0	—	—	—	—	Portugal	6.3	4.9	6.1	—	—	—	—
15.4	16.4	18.4	20.0	21.1	22.0	23.5	Spain	12.9	13.0	13.4	13.9	14.5	15.2	16.1
18.2	16.3	16.0	15.3	15.1	14.0	14.2	Sweden	13.7	12.1	12.7	11.4	11.1	10.5	11.0
4.6	4.6	4.9	5.0	5.3	5.1	5.4	Switzerland	9.9	10.0	10.2	10.4	10.1	10.3	9.8
2.4	3.1	3.9	4.1	4.7	4.7	4.7	Turkey	4.7	5.6	7.1	7.4	7.9	8.2	8.2
—	—	—	—	—	—	—	United Kingdom	—	—	—	—	—	—	—
23.9	24.8	26.4	27.9	29.6	30.5	31.0	United States	22.6	23.4	24.4	25.2	26.1	25.9	25.3
12.2	12.5	13.8	14.5	15.5	16.3	17.4	Average for countries reporting data for 7 years	12.9	13.0	13.8	14.2	14.4	14.5	15.0

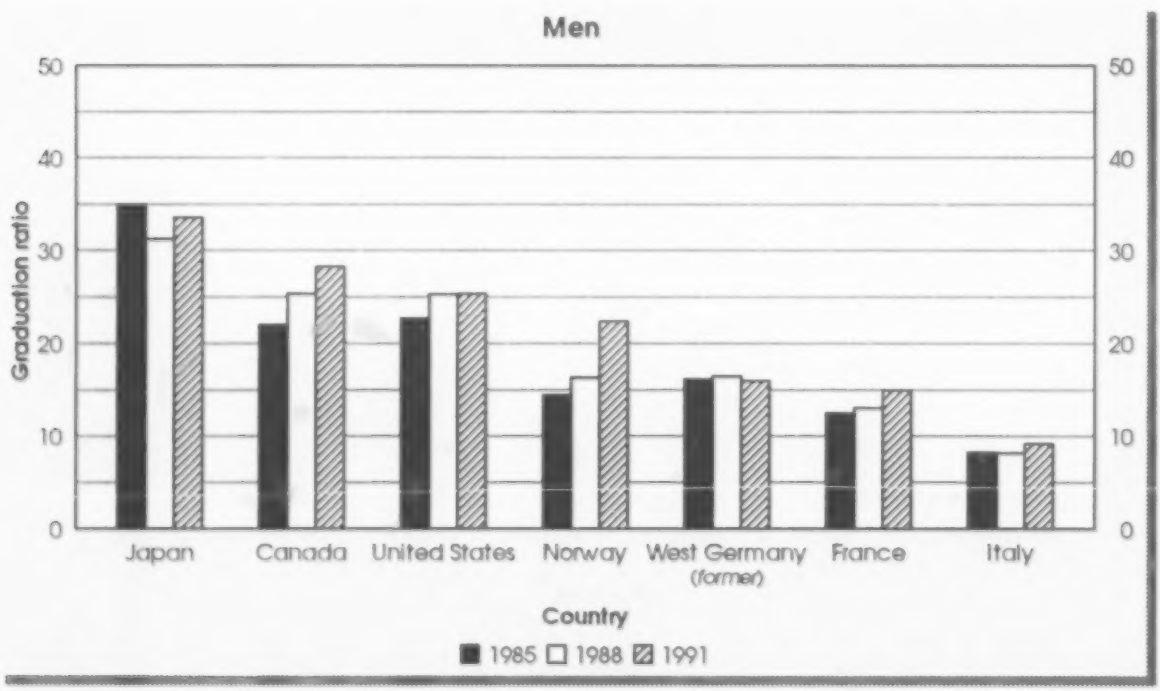
— No data were reported or data were incomplete or inconsistent.

[1]The graduation ratio relates the number of people with first-degrees to the number of people in the population corresponding to the typical age of graduation.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 9 – Graduation ratios in first-degree university education: 1985–1991





SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 10: Percent of First University Degrees Awarded that are in Science

The percent of first degrees awarded that are in science gives an indication of the supply of highly qualified labor in that field, and provides a measure of the relative size of the scientific workforce in a particular country — indicating its ability to compete globally in the fields of science and engineering. Differences among countries and changes over time demonstrate shifts in a nation's priorities or economic focus. First university degrees normally correspond to the bachelor's degree level in the U.S.

- Between 1985 and 1991, science degrees as a percentage of first degrees awarded changed little from year to year. For the average of OECD countries with data available, mathematics and computer science and engineering degrees increased slightly, and natural science degrees decreased slightly. However, all changes were less than 2 percentage points.

- Science degrees, as a percent of all first degrees, decreased in the United States by 6 percentage points between 1985 and 1991. Natural science dropped 1.2 percentage points, mathematics and computer science dropped 1.9 percentage points, and engineering dropped 2.6 percentage points.

- In 1985, the United States, the former West Germany, and Japan reported similar percentages of first degrees in science; in 1991, the percentage in the United States was about half the percentage in the former West Germany, and about two-thirds of the percentage in Japan.

- The percent of first degrees awarded that were in natural science remained relatively stable between 1985 and 1991. Of the G-7 countries reporting data, the former West Germany and Canada showed increases in the percent of first degrees awarded in natural science, the United States and Italy showed decreases, and Japan showed no change at all.

- Overall, the percentage of first degrees in mathematics and computer science increased slightly between 1985 and 1991 in OECD countries reporting data during this period. However, except for Sweden (where the increase was over 3 percentage points), changes in all other countries were relatively slight.

- In the majority of OECD countries reporting data, the percentage of first degrees in engineering increased slightly between 1985 and 1991. Belgium, Sweden, Denmark, and the former West Germany showed the largest increases, while Turkey and the United States showed the largest decreases.

Table 10

Percent of first university degrees awarded that are in science: 1985–1991

All science degrees								Natural sciences						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	23.4	23.4	23.0	—	21.6	Australia	—	—	16.0	16.3	16.1	—	15.9
16.8	15.9	16.3	18.2	20.9	19.6	20.1	Austria	5.0	4.5	4.7	4.5	6.0	5.3	5.9
—	26.3	29.7	—	—	—	32.2	Belgium	4.6	5.5	5.8	—	—	—	4.3
17.1	17.9	17.9	18.0	17.2	16.4	15.5	Canada	4.9	5.2	5.6	5.8	6.1	6.0	5.7
22.5	26.4	26.4	29.3	24.8	26.1	27.6	Denmark	6.3	6.3	6.0	6.1	5.3	4.4	6.1
39.3	38.3	34.7	31.5	29.3	33.5	34.5	Finland	7.7	8.5	5.6	5.7	4.4	4.1	4.2
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
23.8	25.2	26.9	29.2	30.3	31.3	31.5	West Germany (former)	5.0	5.1	5.5	6.2	6.7	7.2	7.3
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
28.8	26.7	27.9	27.9	32.0	34.1	28.5	Ireland	12.8	11.4	13.2	13.4	13.6	14.1	12.4
19.5	19.0	18.9	19.3	19.7	19.7	19.8	Italy	8.1	7.7	7.7	7.5	7.6	7.6	7.5
22.7	23.1	23.5	23.6	23.8	23.5	23.5	Japan	2.4	2.5	2.5	2.6	2.6	2.4	2.4
—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—
21.8	21.1	22.7	26.4	20.5	21.1	21.4	Netherlands	8.5	7.9	7.6	8.8	7.1	7.1	6.5
20.5	—	—	21.7	23.0	19.5	16.3	New Zealand	11.7	—	—	10.5	11.6	8.2	7.1
—	—	12.7	11.5	—	12.9	12.3	Norway	2.5	2.6	2.4	1.7	1.8	2.1	1.8
—	20.8	20.2	—	—	24.3	—	Portugal	6.5	6.4	2.9	—	—	6.7	—
13.9	14.0	14.1	14.0	14.0	15.0	15.4	Spain	5.5	5.7	5.8	5.4	5.5	5.7	5.3
15.4	18.7	21.6	21.6	22.6	24.0	24.3	Sweden	2.6	3.1	3.5	3.4	3.5	4.1	4.2
20.2	20.9	22.1	22.8	22.8	23.0	22.7	Switzerland	10.3	9.5	10.9	10.6	11.0	11.2	11.0
23.0	20.4	21.7	22.7	21.2	20.6	21.3	Turkey	3.6	3.0	3.2	4.8	4.7	4.6	4.9
—	—	—	—	—	—	—	United Kingdom	—	—	—	—	—	—	—
21.7	21.7	20.9	19.5	18.1	16.9	15.9	United States	6.3	6.1	5.9	5.5	5.2	5.1	5.1
21.9	22.1	22.5	23.1	22.7	23.2	23.0	Average for countries reporting data for 7 years	6.1	5.9	6.0	6.1	6.1	6.1	6.0

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 10 (continued)

Percent of first university degrees awarded that are in science: 1985–1991

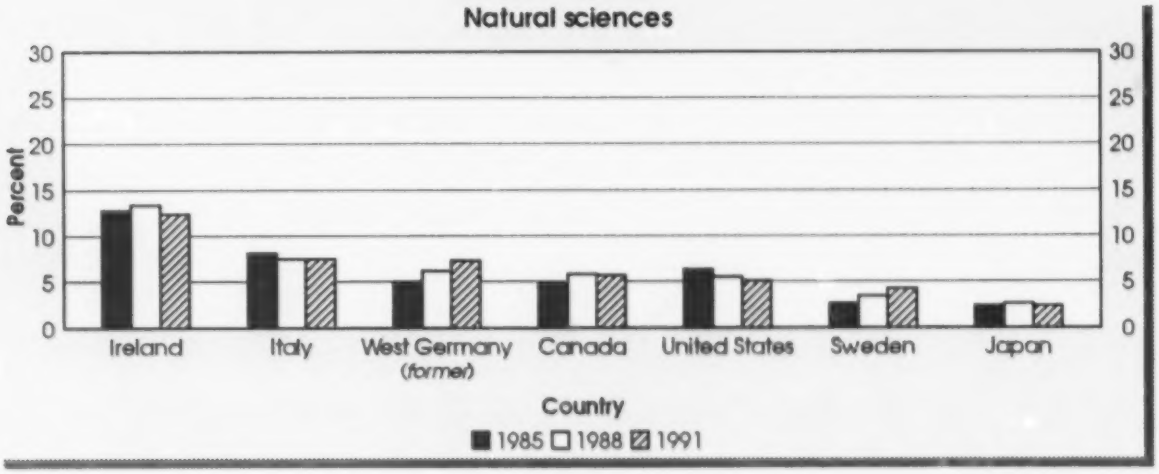
Mathematics and computer science								Engineering						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	—	Australia	—	—	7.4	7.1	6.9	—	5.7
4.1	4.0	4.0	5.5	5.9	5.2	4.8	Austria	7.7	7.4	7.6	8.2	8.9	9.0	9.5
1.7	2.1	1.8	—	—	—	1.7	Belgium	—	18.7	22.1	—	—	—	26.3
4.5	5.1	5.2	4.9	4.6	4.2	3.7	Canada	7.7	7.6	7.0	7.4	6.4	6.2	6.1
—	—	—	—	—	—	0.1	Denmark	16.2	20.0	20.4	23.2	19.6	21.7	21.4
6.3	6.1	5.1	5.4	4.0	5.9	6.6	Finland	25.3	23.7	23.9	20.5	21.0	23.4	23.7
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
2.3	2.6	2.7	2.9	3.3	3.5	3.9	West Germany (former)	16.5	17.5	18.7	20.0	20.3	20.5	20.2
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
4.0	2.7	3.1	2.6	4.7	6.3	4.4	Ireland	12.0	12.6	11.5	11.9	13.7	13.7	11.6
3.1	3.2	3.5	3.9	3.9	3.9	3.8	Italy	8.3	8.1	7.8	7.9	8.3	8.3	8.5
—	—	—	—	—	—	—	Japan[1]	20.3	20.6	20.9	21.0	21.2	21.0	21.1
—	—	—	—	—	—	—	Luxembourg							
1.2	1.3	1.4	1.5	1.6	1.6	1.6	Netherlands	12.1	11.9	13.7	16.0	11.8	12.4	13.3
5.5	—	—	5.6	6.7	5.5	4.0	New Zealand	3.3	—	—	5.6	4.7	5.8	5.2
1.8	2.2	1.6	1.3	0.8	0.6	0.6	Norway	—	—	8.8	8.6	—	10.2	9.9
—	1.9	2.2	—	—	7.0	—	Portugal	—	12.5	15.1	—	—	10.5	—
1.3	1.5	1.6	2.0	2.0	2.6	2.9	Spain	7.0	6.8	6.6	6.7	6.4	6.7	7.1
1.6	2.4	3.5	4.2	4.6	4.7	4.9	Sweden	11.3	13.1	14.7	13.9	14.5	15.2	15.2
2.1	3.0	3.2	3.3	3.8	3.7	3.8	Switzerland	7.9	8.5	8.0	8.9	8.0	8.1	7.9
1.6	1.6	1.9	2.6	2.3	2.1	2.3	Turkey	17.8	15.9	16.6	15.3	14.2	13.8	14.1
—	—	—	—	—	—	—	United Kingdom	—	—	—	—	—	—	—
5.5	5.9	5.7	5.1	4.5	4.0	3.6	United States	9.8	9.7	9.4	8.9	8.4	7.8	7.2
3.0	3.2	3.3	3.5	3.5	3.7	3.6	Average for countries reporting data for 7 years	12.9	13.1	13.3	13.6	13.1	13.4	13.4

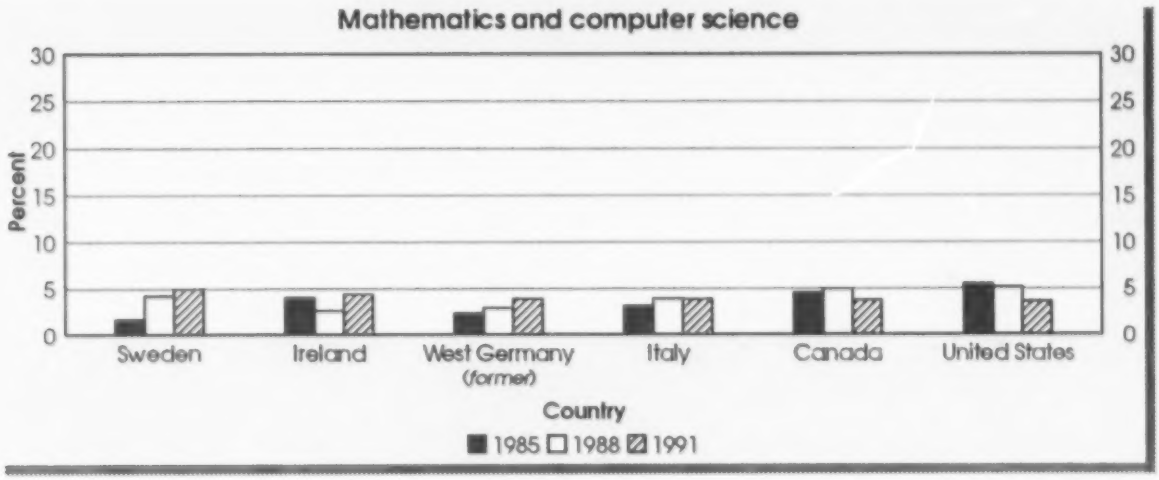
— No data were reported or data were incomplete or inconsistent.

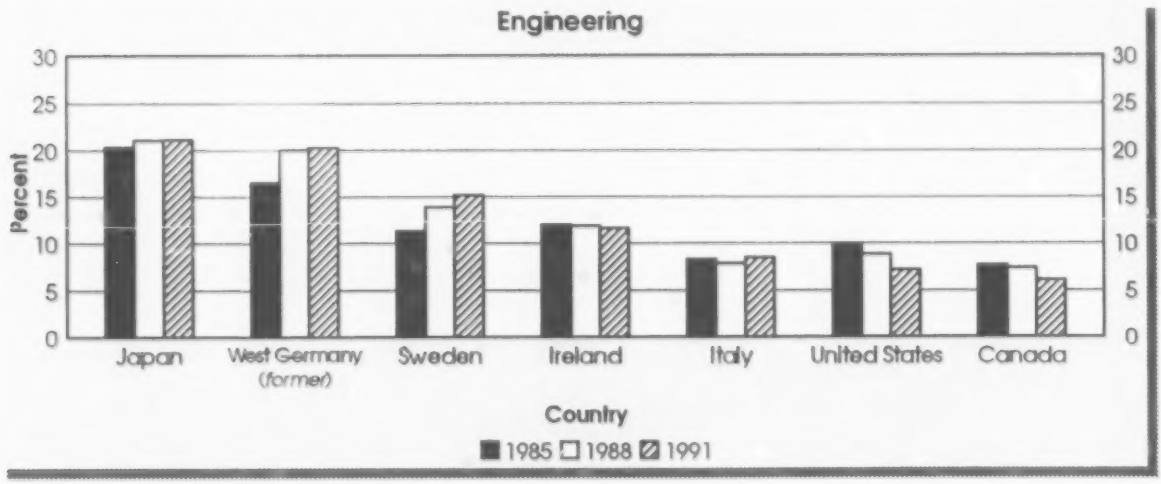
[1]The percent of first degrees that are in mathematics and computer science is included in the percent for first degrees in engineering.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 10 – Percent of first university degrees awarded that are in science: 1985–1991







SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 11: Percent of Graduate Degrees Awarded that are in Science

Graduate programs involve a high level of skill and training, and many graduate programs in science revolve around research. The percent of graduate degrees awarded that are in science is an indication of the relative number of highly trained scientists in a nation, compared to experts in other fields.

- The percent of graduate degrees awarded by universities that are in science dropped overall between 1985 and 1991. Countries experiencing large drops in graduate degrees awarded in science as a percent of total degrees included Finland (18.4 percentage points), Turkey (14.1), Spain (9.0), Norway (6.3), and Austria (5.9). However, several countries, including the former West Germany, Japan, and Denmark, showed increases in the percent of graduate degrees awarded in science.

- Overall, there were more degrees awarded in natural science and engineering than in mathematics and computer science. The average for all the OECD countries that reported data (for the seven years between 1985 and 1991) for the percent of graduate degrees awarded that were in mathematics and computer science or engineering did not fluctuate much between 1985 and 1991. However, the average for the percent of graduate degrees awarded in natural science dropped by 2.6 percentage points, from 15.1 percent to 12.5 percent.

- While the percent of graduate degrees awarded in the natural sciences dropped overall, it increased in the former West Germany and Switzerland. The United States reported a drop in the percentage of graduate degrees awarded in the natural sciences, making it the country with the lowest percent of graduate degrees awarded that are in natural science of all OECD countries reporting data.

- The percent of graduate degrees awarded in mathematics and computer science was much smaller than that of the other sciences. However, the percentage increased in some countries, including Sweden, Denmark, and Ireland. Of the G-7 countries, Canada, the former West Germany, and the United States reported slight increases in the percent of graduate degrees awarded in mathematics and computer science from 1985 to 1991.

- In each year between 1985 and 1991, the percentage of graduate degrees awarded in engineering was slightly lower in the United States than in the former West Germany and substantially lower than in Japan. While the percentage of graduate degrees in the United States increased slightly from 1985 to 1991, less than 7 percent of degrees awarded in 1991 were in engineering, compared to 8 percent in the former West Germany and almost 45 percent in Japan.

Table 11

Percent of graduate degrees awarded in university education that are in science: 1985–1991

All science degrees								Natural sciences						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	12.9	13.6	14.2	—	13.9	Australia	—	—	9.2	9.5	9.8	—	9.6
43.3	37.7	40.7	40.4	35.6	37.7	37.4	Austria	14.2	10.0	12.3	12.2	11.3	12.3	13.4
—	—	—	—	—	—	—	Belgium	—	—	—	—	—	—	—
19.7	20.6	21.3	20.8	20.4	20.0	19.7	Canada	7.5	7.8	8.2	8.5	7.9	7.8	7.7
16.0	16.2	19.7	19.6	23.2	22.2	22.9	Denmark	4.1	4.4	4.5	5.2	6.1	5.8	5.4
47.6	43.7	45.1	38.3	30.6	30.6	29.2	Finland	24.0	22.8	21.2	18.8	14.6	14.7	12.4
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
27.7	28.5	29.8	30.3	31.3	33.2	33.9	West Germany (former)	18.7	19.4	20.0	20.9	21.6	23.5	23.3
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
31.4	36.0	32.4	33.9	33.8	34.5	28.4	Ireland	18.9	22.1	18.5	18.0	21.1	19.5	15.7
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
50.1	50.5	51.5	51.3	52.6	54.6	54.2	Japan	9.5	8.8	9.0	8.9	9.2	9.5	9.5
—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—
—	—	—	25.2	30.9	28.9	29.9	Netherlands	20.6	19.9	17.5	14.0	16.9	17.7	16.7
—	—	—	25.5	27.6	22.6	19.3	New Zealand	—	—	—	18.6	16.1	13.8	11.5
40.1	37.7	36.2	29.9	34.8	33.4	33.8	Norway	17.9	14.5	13.7	9.2	10.1	8.0	7.9
—	—	—	—	—	—	—	Portugal	—	—	—	—	—	—	—
35.6	34.4	34.1	30.5	32.0	26.9	26.6	Spain	28.6	27.6	25.8	21.6	24.6	19.7	19.1
48.0	43.6	44.5	44.0	44.6	48.5	44.4	Sweden	21.2	18.3	17.5	19.7	18.1	19.4	15.1
30.7	29.8	29.5	31.4	31.1	30.2	32.6	Switzerland	20.3	22.7	21.1	22.6	22.9	22.0	23.1
35.8	30.9	24.9	32.6	26.6	24.0	21.7	Turkey	6.6	6.7	8.2	8.1	8.5	7.6	6.4
—	—	—	—	—	—	—	United Kingdom	—	—	—	—	—	—	—
13.5	13.9	14.4	14.7	14.7	14.5	13.8	United States	4.5	4.5	4.5	4.4	4.3	4.2	3.8
33.8	32.6	32.6	32.1	31.6	31.6	30.7	Average for countries reporting data for 7 years	15.1	14.6	14.2	13.7	13.9	13.4	12.5

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table 11 (continued)

Percent of graduate degrees awarded in university education that are in science: 1985–1991

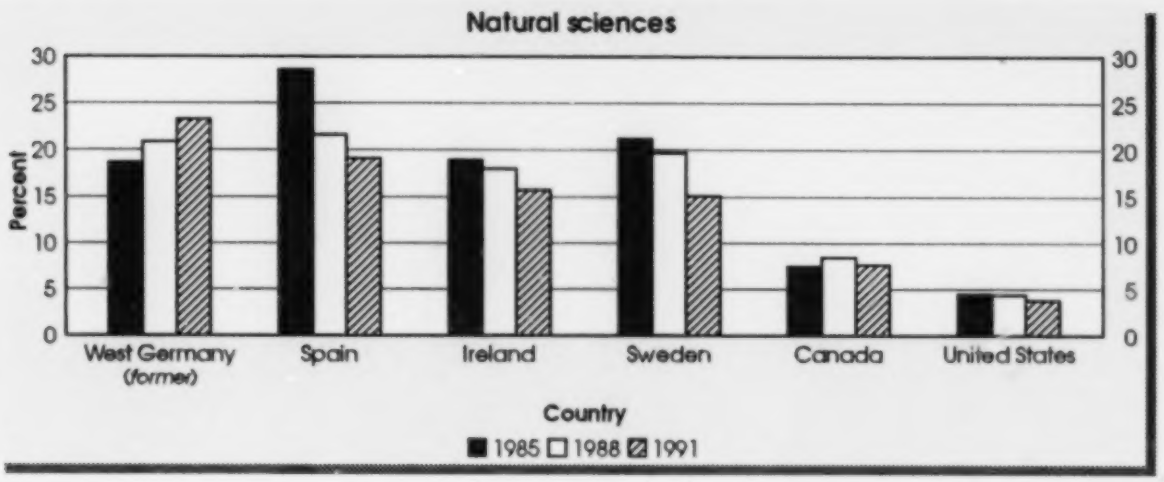
Mathematics and computer science								Engineering						
1985	1986	1987	1988	1989	1990	1991	Country	1985	1986	1987	1988	1989	1990	1991
—	—	—	—	—	—	—	Australia	—	—	3.7	4.2	4.5	—	4.3
7.3	4.8	5.7	5.7	6.3	4.6	6.1	Austria	21.7	22.9	22.8	22.5	18.1	20.8	17.9
—	—	—	—	—	—	—	Belgium	—	—	—	—	—	—	—
2.8	2.9	3.1	3.3	3.3	3.4	3.4	Canada	9.4	10.0	9.9	9.0	9.2	8.8	8.7
2.7	3.2	3.7	3.5	4.6	4.8	4.5	Denmark	9.2	8.7	11.5	10.9	12.5	11.6	13.0
6.3	6.7	6.2	6.8	4.7	5.4	4.6	Finland	17.2	14.2	17.7	12.7	11.3	10.5	12.2
—	—	—	—	—	—	—	France	—	—	—	—	—	—	—
1.8	1.8	1.8	1.9	2.1	2.3	2.2	West Germany (former)	7.2	7.3	8.0	7.5	7.6	7.4	8.4
—	—	—	—	—	—	—	Greece	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Iceland	—	—	—	—	—	—	—
2.6	2.3	2.3	2.3	2.2	5.8	4.1	Ireland	9.9	11.6	11.6	13.5	10.5	9.3	8.6
—	—	—	—	—	—	—	Italy	—	—	—	—	—	—	—
—	—	—	—	—	—	—	Japan[1]	40.5	41.7	42.5	42.4	43.5	45.1	44.7
—	—	—	—	—	—	—	Luxembourg	—	—	—	—	—	—	—
—	—	—	2.1	2.5	1.5	1.6	Netherlands	7.5	7.3	7.2	9.1	11.4	9.7	11.6
5.4	—	—	2.9	2.9	4.7	3.6	New Zealand	—	—	—	4.0	—	4.0	4.2
3.5	3.3	3.8	1.5	2.4	2.1	2.5	Norway	18.7	19.9	18.7	19.2	22.3	23.3	23.4
—	—	—	—	—	—	—	Portugal	—	—	—	—	—	—	—
1.8	1.8	2.0	2.6	1.9	1.4	2.5	Spain	5.1	5.0	6.3	6.3	5.5	5.7	5.0
6.8	6.3	7.1	6.2	6.8	9.2	8.2	Sweden	20.0	18.9	20.0	18.1	19.8	19.9	21.1
2.8	1.6	1.6	2.1	2.1	1.7	1.8	Switzerland	7.6	5.5	6.8	6.8	6.1	6.5	7.6
2.8	2.3	2.3	3.2	3.0	3.3	2.8	Turkey	26.3	21.8	14.5	21.3	15.1	13.2	12.4
—	—	—	—	—	—	—	United Kingdom	—	—	—	—	—	—	—
2.8	3.1	3.3	3.4	3.4	3.4	3.2	United States	6.3	6.3	6.7	6.8	7.0	6.9	6.7
3.7	3.3	3.6	3.5	3.6	4.0	3.8	Average for countries reporting data for 7 years	14.8	14.4	14.6	14.7	14.3	14.2	14.4

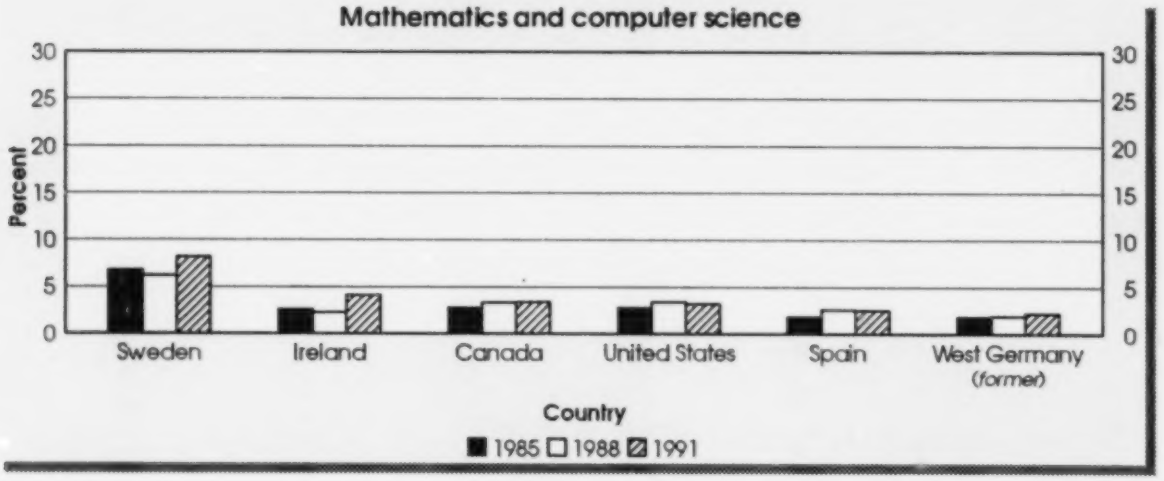
— No data were reported or data were incomplete or inconsistent.

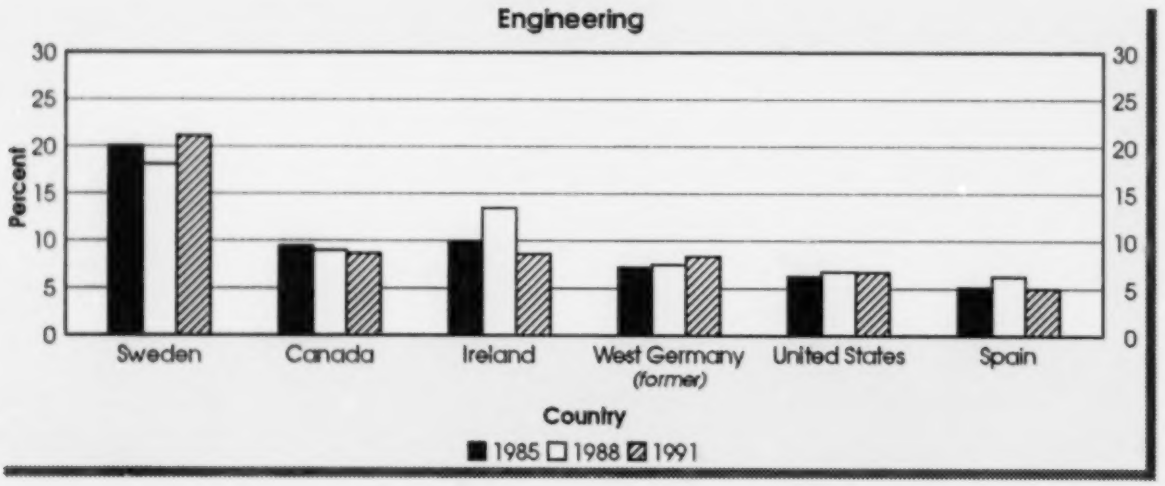
[1]The percent of graduate degrees that are in mathematics and computer science is included in the percent for graduate degrees in engineering.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 11 – Percent of graduate degrees awarded in university education that are in science: 1985–1991







SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

LABOR MARKET OUTCOMES

Indicator 12: Labor Force Participation and Educational Attainment for Those 25 to 64 Years of Age and Participation in the Labor Force by Women

This indicator illustrates the relationship between educational attainment and participation in the labor force, which consists of people who are either employed or actively seeking work. Variation in labor force participation by levels of educational attainment not only reflects the impact of formal education on employment opportunities, but signifies economic returns to human capital investment for both individuals and society. Comparing the rates of different countries by educational attainment also can give an indication of how closely the skills taught in the education system parallel those needed in the workplace, as well as how much value the country places on an educated workforce. However, a gender gap in labor force participation may reflect the impact of both cultural and structural factors on social organization of the economy.

- In general, labor force participation rates remained relatively stable between 1989 and 1992. In 1992, labor force participation rates ranged from 61 percent in Turkey to 91 percent in Sweden. Labor force participation rates in the United States, at 79 percent, fell in the middle. Of the G-7 countries reporting data for most years, Italy, the United States, and France showed small increases in the labor force participation rates, while Canada and the United Kingdom reported slight decreases.

- In all OECD countries reporting data, the labor force participation rates were higher for those with a university education than for those with only an upper secondary education in 1989, 1991, and 1992. In addition, the majority of OECD countries with available data reported a decline in the labor force participation rates for those with an upper secondary education. Between 1989 and 1992, participation rates showed the largest decrease in percentage points in Finland and Australia and the largest increase in Ireland.

- While participation rates for those with a university education remained relatively stable for the average of OECD countries that reported data in 1989, 1991, and 1992, France, Norway, and the Netherlands experienced a decrease in labor force participation, and New Zealand and Switzerland reported an increase.

- The labor force participation rate for women increased between 1988 and 1992 in the majority of OECD countries with available data. Portugal and the United Kingdom were in the minority, showing drops of 6.5 and 1.8 percentage points, respectively. Canada, France, Italy, and the United States all showed increases in the labor force participation rates for women of over 1 percentage point.

Table 12

Labor force participation for women 25 to 64 years of age and overall participation for all persons 25 to 64 years of age: 1988–1992

Participation rate for women (all levels)						Overall labor force participation rate (all levels)				
1988	1989	1990	1991	1992	Country	1988	1989	1990	1991	1992
—	56.9	—	56.3	60.8	Australia	—	72.7	—	70.2	74.4
—	51.3	—	54.9	54.7	Austria	—	67.7	—	69.6	68.1
—	49.1	—	52.3	54.6	Belgium	—	65.0	—	66.8	68.0
—	67.6	—	69.1	68.9	Canada	—	78.2	—	78.3	77.8
79.1	—	—	79.4	79.4	Denmark	83.9	—	—	83.4	83.3
—	77.4	—	76.5	75.9	Finland	—	80.9	—	80.3	79.8
—	63.8	—	64.8	65.7	France	—	74.9	—	75.0	75.3
—	—	—	63.7	64.2	West Germany (former)	—	—	—	75.8	75.6
—	—	—	—	—	Greece	—	—	—	—	—
—	—	—	—	—	Iceland	—	—	—	—	—
—	38.2	—	37.6	43.9	Ireland	—	63.0	—	64.4	65.2
—	43.4	—	45.0	46.2	Italy	—	63.3	—	64.3	65.1
—	—	—	—	—	Japan	—	—	—	—	—
—	—	—	—	—	Luxembourg	—	—	—	—	—
—	—	50.8	52.5	53.8	Netherlands	—	—	68.3	69.1	69.7
—	—	62.8	63.7	63.8	New Zealand	—	—	74.7	75.3	75.2
—	74.2	—	75.1	74.6	Norway	—	82.1	—	82.0	81.4
—	60.5	—	63.1	54.0	Portugal	—	70.2	—	75.2	68.8
—	38.5	—	41.2	42.9	Spain	—	61.9	—	63.3	63.7
—	—	—	88.6	89.1	Sweden	—	—	—	91.1	91.4
—	64.6	—	67.4	69.1	Switzerland	—	80.0	—	81.7	82.3
—	—	—	31.2	33.4	Turkey	—	—	—	66.2	61.3
—	68.2	—	69.2	66.4	United Kingdom	—	78.8	—	79.2	77.5
—	68.3	—	69.1	70.0	United States	—	78.4	—	78.7	79.2
—	57.8	—	60.1	59.8	Average for countries reporting data for 1989, 1991 and 1992	—	72.7	—	73.5	73.3

— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

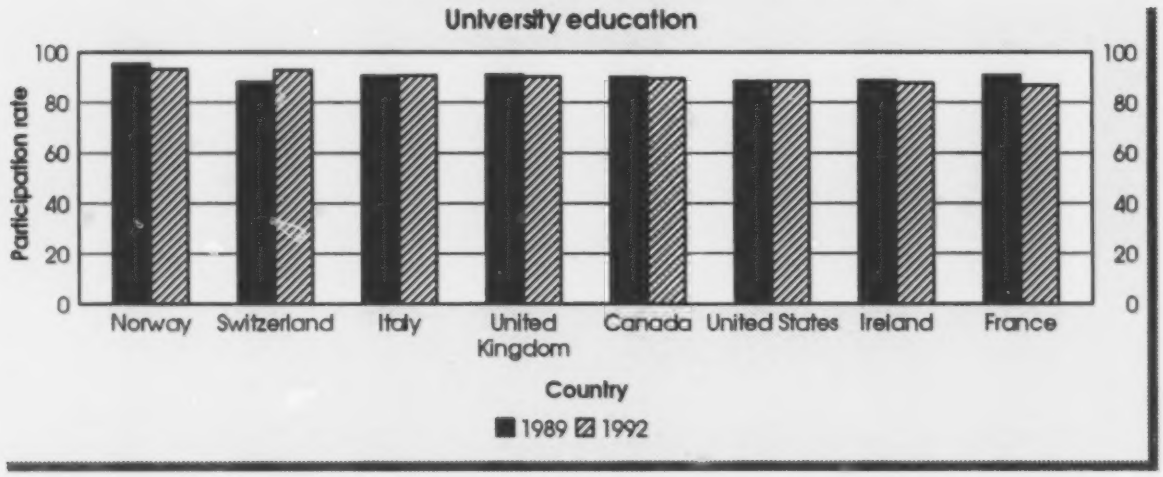
Table 12 (continued)
Labor force participation for those 25 to 64 years of age by educational attainment: 1988–1992

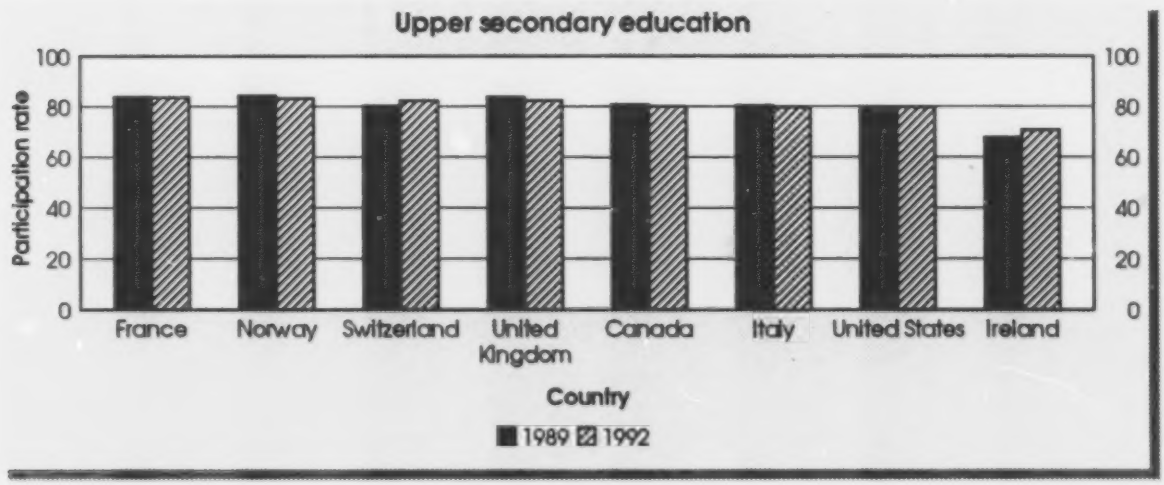
Participation rate for those with upper secondary education						Participation rate for those with university education				
1988	1989	1990	1991	1992	Country	1988	1989	1990	1991	1992
—	82.5	—	79.8	80.2	Australia	—	87.8	—	87.7	89.2
—	74.6	—	75.6	73.9	Austria	—	89.2	—	89.7	88.4
—	78.7	—	78.6	78.8	Belgium	—	90.1	—	89.1	88.9
—	80.7	—	79.8	79.9	Canada	—	90.0	—	89.2	89.6
90.2	—	—	89.0	88.9	Denmark	95.0	—	—	94.2	93.7
—	87.2	—	86.0	84.7	Finland	—	92.7	—	92.5	91.8
—	83.8	—	83.8	83.5	France	—	90.8	—	87.7	86.9
—	—	—	76.4	76.7	West Germany (former)	—	—	—	89.8	89.8
—	—	—	—	—	Greece	—	—	—	—	—
—	—	—	—	—	Iceland	—	—	—	—	—
—	67.8	—	67.8	70.7	Ireland	—	88.8	—	86.9	87.9
—	80.1	—	79.4	79.8	Italy	—	90.6	—	91.1	90.7
—	—	—	—	—	Japan	—	—	—	—	—
—	—	—	—	—	Luxembourg	—	—	—	—	—
—	—	76.1	76.9	77.0	Netherlands	—	—	90.7	90.4	85.5
—	—	78.9	79.1	79.1	New Zealand	—	—	85.9	88.1	89.5
—	84.2	—	83.4	83.2	Norway	—	95.4	—	93.7	93.3
—	—	—	91.1	88.4	Portugal	—	—	—	92.4	95.2
—	81.8	—	82.5	80.2	Spain	—	86.5	—	87.0	86.4
—	—	—	93.1	93.0	Sweden	—	—	—	95.4	95.2
—	80.3	—	81.3	82.2	Switzerland	—	88.1	—	92.0	92.7
—	—	—	72.5	74.7	Turkey	—	—	—	89.8	90.2
—	83.5	—	84.0	82.1	United Kingdom	—	91.1	—	90.7	90.3
—	78.5	—	78.8	79.7	United States	—	88.5	—	88.5	88.4
—	80.3	—	80.1	79.9	Average for countries reporting data for 1989, 1991 and 1992	—	90.0	—	89.7	89.6

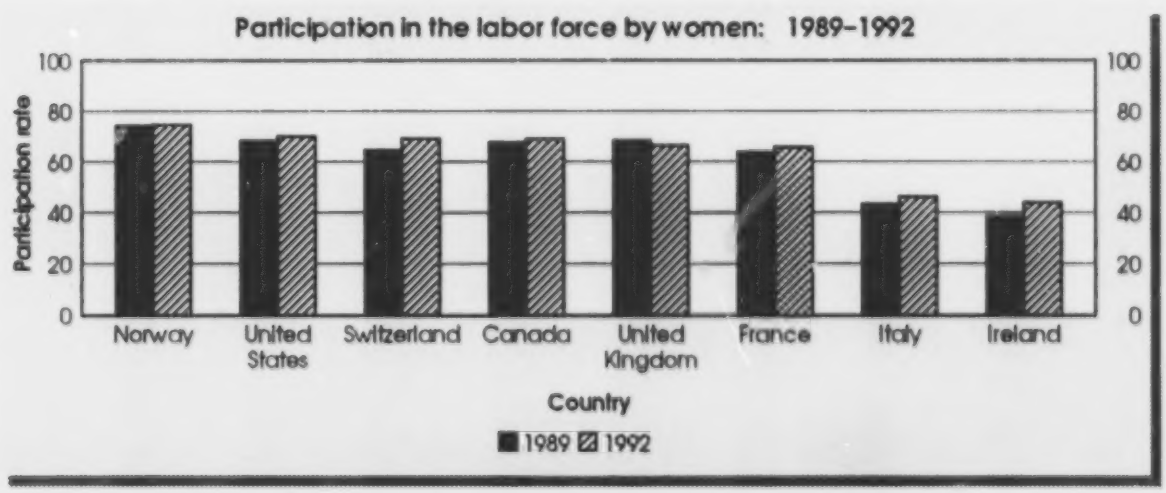
— No data were reported or data were incomplete or inconsistent.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Indicator 12 – Labor force participation and educational attainment for those 25 to 64 years of age: 1989 and 1992







SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

BIVARIATE RELATIONSHIPS

Indicator 13: The Relationship between Participation in Formal Education and Expenditures per Student from Public Sources

Participation in formal education, defined as the percentage of the population enrolled in school by age group, indicates the value a country places on education or the dependency of the economy on a trained workforce. Expenditures per student from public sources, which is a measure of the public economic resources a country devotes to education, not only reflects the wealth status of a country, but how much emphasis that country places on education.

There are at least two reasons to expect a positive relationship between these two indicators. First, higher expenditures per student are usually associated with wealthier countries, and an economically more advanced country usually has a higher participation rate in formal education than an economically less developed country. Second, higher expenditures per student reflect more resources being devoted to education relative to the size of the student body. This may lead to a high quality of education, which may, in turn, attract more participation in formal education. The effects produced by these two reasons on the participation rate could be called the "development effect" and the "resource effect" respectively.

There are certainly other factors that may affect participation in formal education. For example, a social value or economic reward system that emphasizes the importance of education may have a strong impact upon the education participation rate. Furthermore, the expenditures per student indicator is based only upon expenditures from public sources, even though private expenditures on education also affect the participation rate in formal education. Clearly, ignoring such factors when examining the bivariate relationship between these indicators will distort somewhat the image one gets of a complex issue.

The experience of OECD countries reporting data on both indicators seems to support the hypothesis that there is a positive relationship between the two indicators. However, when interpreting the relationship, it is important to recognize that the expenditures indicator only includes public expenditures, while the participation indicator includes students enrolled in public and private schools. The horizontal axis of the following graph shows expenditures per student (enrolled in public and private schools) from public sources, and the vertical axis shows the participation rate in formal education. The graph demonstrates the relationship between the two indicators by showing the relevant data for lower and upper secondary education in 12 OECD countries. The graph illustrates that lower participation rates are quite strongly associated with lower public expenditures per student. The following observations also are noteworthy.

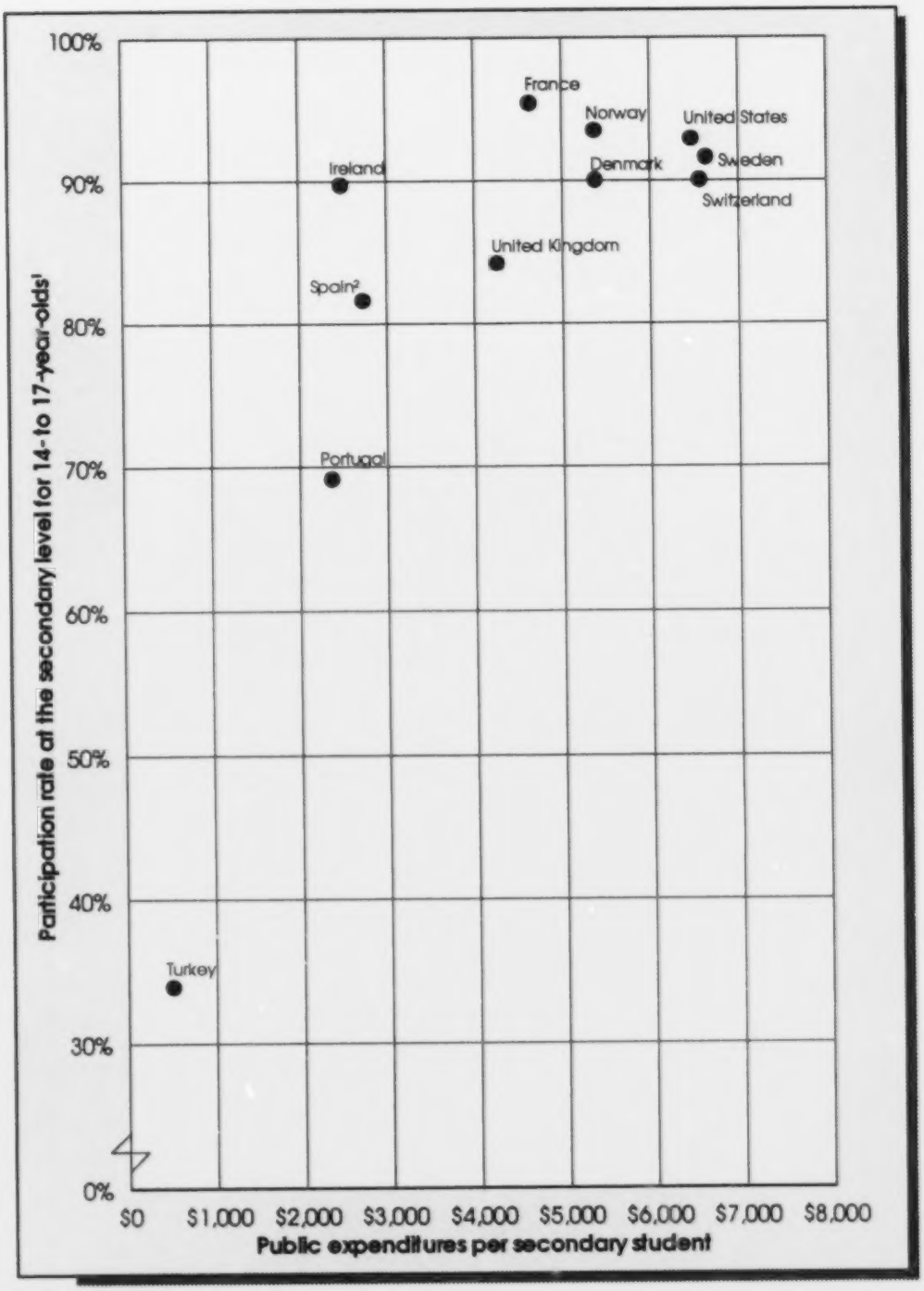
- For OECD countries that spent $5,000 or more per student at the secondary level in 1991, the participation rate exceeded 90 percent. In contrast, the per-student expenditures for Turkey were much lower ($504), and the participation rate was also much lower (33.9 percent).

- The United States, Switzerland, and Sweden have the highest per-student expenditures at the secondary level and their participation rates are also among the highest.

- France is one exception to the general pattern. In 1991, among the OECD countries with data available, France had the highest participation rate in secondary education (95.4 percent) even though its expenditures per student ($4,640) were comparatively low.

- Ireland is another exception to the general pattern. Per-student expenditures from public sources in Ireland are among the lowest of OECD countries reported here ($2,488), but the participation rate at the secondary level is comparable to other OECD countries with higher expenditures per student from public sources. In Ireland, education expenditures from private sources (e.g., the Catholic Church) contribute significantly to total education expenditures. This may explain why the country's participation rate appears high in relation to public expenditures per student.

Indicator 13 – Relationship between participation rate in lower and upper secondary education and public expenditures per secondary student: 1991



[1] Public and private.

[2] Participation rates for Spain only include full-time students.

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985–1992.*

Indicator 14: The Relationship between Changes in the Population Age 5 to 13 and Changes in the Student-Teacher Ratio at the Primary Level

The student-teacher ratio indirectly measures students' accessibility to teachers' guidance and help in school, and, therefore, it has significant implications for quality in education. One factor that may affect the student-teacher ratio is the growth or decline in the size of the school-age population. For example, if the number of teachers stays stable but the school-age population increases significantly, the student-teacher ratio would increase as a result. Stated another way: If the goal is to maintain the current student-teacher ratio, under situations where there is an increase in the school-age population, the number of teachers must, as a consequence, increase.

If the relative amount of resources devoted to education remains the same, and the supply of teachers in the short-run is fully responsive to changes in the number of school-age children, the student-teacher ratio should remain constant, irrespective of whether the number of school-age children increases or decreases. The following graph shows that the observed relationship between the percentage change in the number of children and student-teacher ratios differs from the expected relationship. The horizontal axis of the graph measures the percentage change in the number of 5- to 13-year-olds between 1985 and 1991, and the vertical axis measures the absolute change in student-teacher ratios at the primary level between 1985 and 1991.

Between 1985 and 1991, most of the OECD countries experienced a decline in the number of 5- to 13-year-olds,[4] and some of these declines were substantial. For example, between 1985 and 1991, the number of 5- to 13-year-olds declined by over 15 percent in Italy, Denmark, and Spain. During the same period, the student-teacher ratios at the primary level decreased in most countries (Indicator 6). The observed relationship between these two variables over time reflects several factors, one of which could be rigidity in the supply of teachers. There may be a tendency in most countries to maintain an absolute level of human resources in times of declining school-age population. When the size of the school-age population is declining, school authorities may not reduce staff at the same rate. This situation prevailed in the United States during the 1970s when large enrollment declines were met by only modest reductions in the number of teachers. Large reductions in student-teacher ratios resulted. Conversely, in the absence of appropriate long-range planning, when the school-age cohort increases, the supply of teachers may not respond immediately, causing the student-teacher ratio to increase. Another factor influencing the observed relationship is that over time variations in the student-teacher ratio may reflect the willingness of a country to devote more (or less) of its resources to education relative to the size of its student body.

[4]Refer to Table S2 in the Supplemental Notes and Tables for the number of 5- to 13-year olds in each country, in 1985 and 1991.

- There is only a weak (i.e., statistically insignificant), positive relationship between change in the percentage of children age 5 to 13 and change in student-teacher ratios: a decline in the former measure will accompany a decline in the latter measure. Italy, Denmark, Spain, New Zealand, the Netherlands, and Sweden experienced a relatively large decline on both measures.

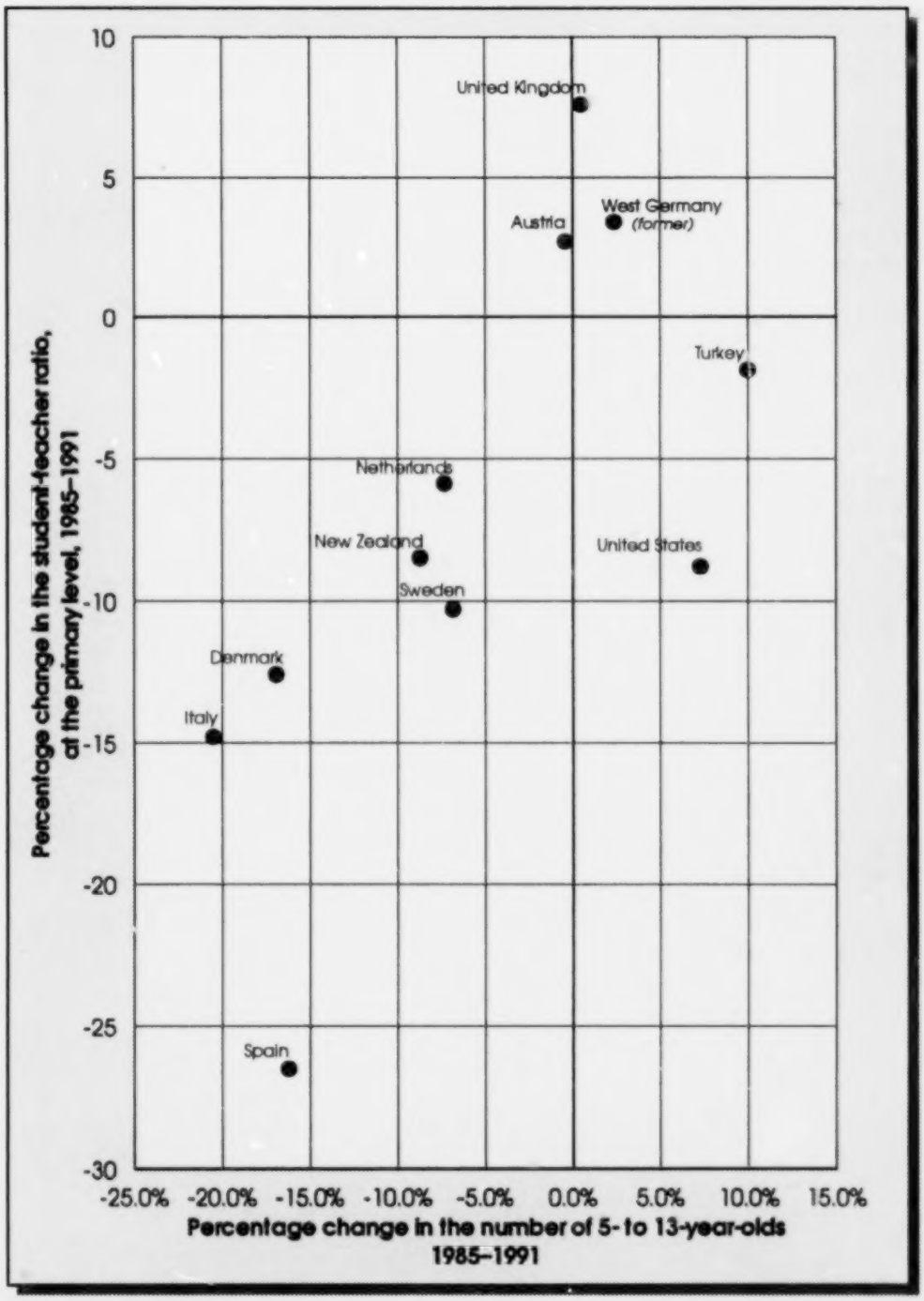
- Spain may be considered an outlier in the sense that it experienced a similar percentage decline in the number of children age 5 to 13 as did Italy and Denmark (i.e., over 15 percent), but had a much larger percentage decline in its student-teacher ratio (over 25 percent) than the other two countries.

- Austria had a small percentage decrease in the population age 5 to 13, which was accompanied by a small percentage increase in the student-teacher ratio.

- The United Kingdom and the former West Germany experienced a small percentage increase in their student-teacher ratios between 1985 and 1991, and also experienced a small percentage increase in the number of 5- to 13-year-olds.

- In the United States and Turkey, the increase in the percentage of children age 5 to 13 was over 5 percent, between 1985 and 1991, but both countries achieved a moderate decrease in the student-teacher ratio at the primary education level.

Indicator 14 – The relationship between changes in the population age 5 to 13 and changes in the student-teacher ratio at the primary level from 1985–1991



SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985–1992.*

Indicator 15: The Relationship between First Degree Graduation Ratio and Public Expenditures on Tertiary Education as a Percentage of GDP

The first degree graduation ratio is the number of students earning their first university degree per 100 persons in the total population who are of the typical age of graduation. The percentage of GDP spent reflects the willingness of a country to devote its economic resources to tertiary education, and the value that its culture places on that education. It is natural to speculate that high public expenditures on tertiary education (as a percent of GDP) are associated with high first degree graduation ratios.

The following graph demonstrates the bivariate relationship between these two measures. The horizontal axis shows the absolute change in public expenditures on tertiary education as a percent of GDP, while the vertical axis shows the absolute change in first degree graduation ratio. With only one exception (Sweden), the observations seem to support the hypothesis that there is a positive relationship between the two variables.

- Between 1985 and 1991, almost all the OECD countries with data available increased public expenditures on tertiary education as a percent of GDP (the only exception being the former West Germany). During the same period, the majority of countries experienced an increase in first degree graduation ratios (exceptions being the former West Germany and Sweden).

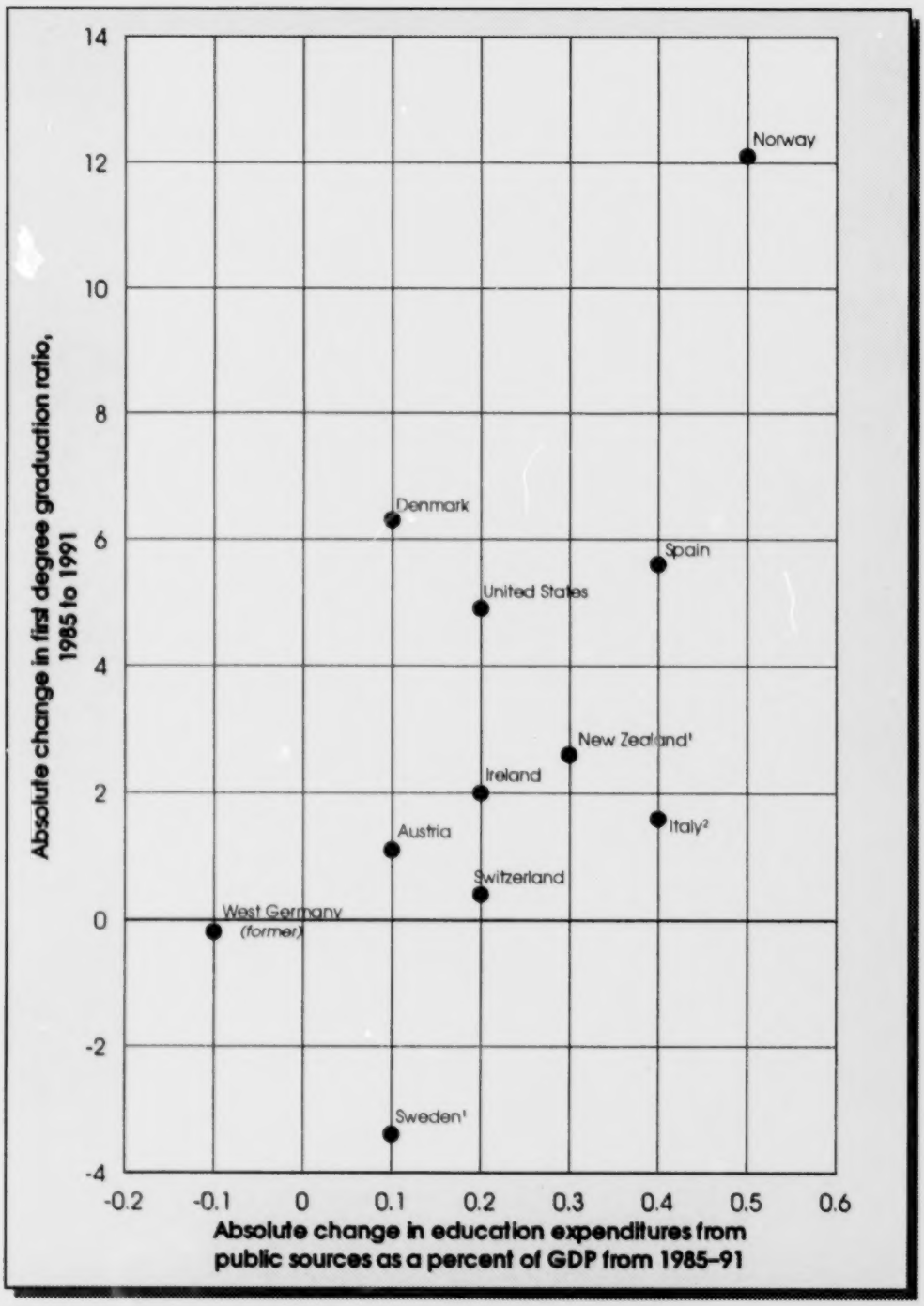
- Among the OECD countries reporting data, Norway's public expenditures on tertiary education as a percent of GDP increased the most (a half percentage point) between 1985 and 1991. During this period, Norway also experienced the largest increase in its first degree graduation ratio (12.1 percentage points).

- Between 1985 and 1991, public expenditures on tertiary education as a percent of GDP dropped one-tenth of a percentage point in the former West Germany. In the same period, the first degree graduation ratio in the former West Germany declined two-tenths of a percentage point.

- Sweden appears to be an outlier in this bivariate relationship. Between 1986 and 1991, although public expenditures on tertiary education as a percent of GDP increased one-tenth of a percentage point in Sweden, the country's first degree graduation ratio declined by 1.7 percentage points.

- With the same absolute increase in public resources allocated to tertiary education as Sweden (i.e., one-tenth of a percentage point of GDP), Denmark and Austria achieved increases in their first degree graduation ratio of over 6 and 1 percentage points, respectively.

Indicator 15 – Relationship between absolute change in education expenditures from public sources as a percent of GDP and first degree graduation ratio



¹ Absolute changes in public expenditures and graduation ratio are from 1986–91.
² Absolute changes in public expenditures and graduation ratio are from 1985–90.
SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985–1992.*

SUPPLEMENTAL NOTES AND TABLES

SUPPLEMENTAL NOTES AND TABLES

Note for Table 1:

In the EAG software, the population data for the Netherlands and Norway appeared to be reversed in 1986. Specifically, the 1986 population figure for the Netherlands was reported as 4.17 million, while the figure reported for Norway was 14.57 million.

Note for Table 2:

In a few countries, the participation rate for 5- to 13-year olds is higher than 100 because the numerator (the number of students enrolled) and the denominator (the population cohort) are derived from different sources. Usually, the denominator is based upon demographic projections.

Note for Table 4:

Upper secondary education, equivalent to high school education in the United States, enrolls varying age cohorts in different OECD countries. To illustrate, in the United States, the typical age range for high school students is 15 to 17, while in countries like France and the former West Germany, the typical age range for upper secondary students is 16 to 18. For more information regarding such differences, please refer to Section IV, "Annotated organization charts of education systems," in *Education at a Glance: OECD Indicators*, 3rd edition, 1995.

Note for Table 6:

Student-teacher ratio is calculated by dividing the number of FTE students by the number of FTE teachers. ("FTE" stands for "full-time equivalent.")

Notes for Table 8:

Expenditures per student from public sources in constant 1991 U.S. dollars is calculated as follows:

1. Public expenditures per student in the national currency are obtained by dividing public education expenditures at a given education level by the number of full-time-equivalent students enrolled in both public and private schools at the same education level.

2. The results obtained in step 1 are then converted into equivalent U.S. dollars by dividing them by the purchasing-power-parity (PPP) exchange rate between a country's national currency and the U.S. dollar. The PPP rate used for this purpose

is the OECD-developed rate pertaining to GDP. Thus, expenditures per student are expressed in current U.S. dollars.

3. Based on the U.S. consumer price index for urban areas (CPI-U), a series of price-inflators is derived by dividing 1991 CPI-U by each year's CPI-U.

4. By multiplying each prior year's expenditures per student in current U.S. dollars by the price-inflators developed in step 3, expenditures per student in current U.S. dollars are converted into 1991 constant U.S. dollars.

The table on the following page lists the PPP exchange rates that were applied in these conversions. Listed below are the price inflators (based on the Consumer Price Index for all urban consumers) that were used to convert current dollars to 1991 dollars:

1985	1986	1987	1988	1989	1990	1991
1.26547	1.24208	1.19881	1.15090	1.09805	1.04210	1.00000

Source: Department of Labor, Bureau of Labor Statistics.

AARG:

The abbreviation AARG, used in Table 8, stands for "average annual rate of growth," and is calculated using the following formula:

$$AARG = (1991\ expenditures\ per\ student / 1985\ expenditures\ per\ student)^{1/6} - 1$$

Note for Indicator 14:

Changes in the number of children in the 5- to 13-year-old population between 1985 and 1991 are shown in Table S2 and changes in the number of primary and secondary teachers between 1985 and 1991 are shown in Table S3.

Table S1. Exchange rate between each country's currency and the U.S. dollar in terms of "Purchasing power parity" (units of the national currency per PPP dollar)

Country	Currency	1985	1986	1987	1988	1989	1990	1991
Australia	Dollar	1.1	1.2	1.2	1.3	1.3	1.4	1.4
Austria	Schilling	14.6	14.9	14.8	14.4	14.2	14.0	14.2
Belgium	Franc	40.5	41.0	40.7	39.9	40.0	39.5	39.2
Canada	Dollar	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Denmark	Kroner	9.3	9.5	9.6	9.6	9.5	9.4	9.2
Finland	Markkaa	5.7	5.7	5.9	6.0	6.2	6.3	6.1
France	Franc	6.6	6.8	6.8	6.7	6.7	6.6	6.5
Germany	Dmark	2.2	2.2	2.2	2.1	2.1	2.1	2.1
Greece	Drachmae	79.7	91.4	101.3	112.7	121.7	140.8	161.1
Iceland	Kronur	38.9	47.3	54.9	65.1	75.2	82.6	85.4
Ireland	Pound	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Italy	Lire	1217.9	1281.9	1317.9	1353.3	1376.7	1421.0	1463.8
Japan	Yen	216.2	214.3	210.8	203.3	196.1	191.8	188.8
Luxembourg	Franc	40.6	41.1	39.5	39.5	40.2	39.7	39.5
Netherlands	Guilder	2.5	2.4	2.3	2.3	2.2	2.2	2.2
New Zealand	Dollar	1.1	1.2	1.4	1.5	1.6	1.6	1.6
Norway	Kroner	9.5	9.1	9.5	9.6	9.7	9.7	9.6
Portugal	Escudo	64.1	75.3	81.2	87.3	94.5	103.7	110.0
Spain	Peseta	91.5	99.2	101.8	103.6	106.2	109.5	110.5
Sweden	Kroner	7.7	8.0	8.2	8.4	8.6	8.9	9.5
Switzerland	Franc	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Turkey	Pound	231.1	296.8	397.8	637.6	1003.0	1491.0	2240.2
United Kingdom	Pound	0.5	0.5	0.5	0.6	0.6	0.6	0.6
United States	Dollar	1.0	1.0	1.0	1.0	1.0	1.0	1.0

SOURCE: Organization for Economic Cooperation and Development (OECD) *Education Statistics, 1985-1992* and *OECD in Figures*, 1995.

Table S2. Changes in the number of children in the population age 5 to 13 between 1985 and 1991

Country	1985	1991	Absolute change between 1985 and 1991	Percent change between 1985 and 1991
Australia	2,289,50	2,247,700	(41,850)	-1.8%
Austria	824,040	821,100	(2,940)	-0.4%
Denmark	613,200	509,850	(103,350)	-16.9%
West Germany (former)	5,552,820	5,686,210	133,390	2.4%
Italy	7,255,510	5,768,110	(1,487,400)	-20.5%
Netherlands	1,738,800	1,612,490	(126,310)	-7.3%
New Zealand	500,310	456,940	(43,370)	-8.7%
Spain	5,776,500	4,839,720	(936,780)	-16.2%
Sweden	943,550	879,240	(64,310)	-6.8%
Turkey	10,435,960	11,480,310	1,044,350	10.0%
United Kingdom	6,454,680	6,486,200	31,520	0.5%
United States	30,149,280	32,344,320	2,195,040	7.3%

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

Table S3. Changes in the number of primary and secondary school teachers between 1985 and 1991[1]

Country	1985	1991	Absolute change between 1985 and 1991	Percent change between 1985 and 1991
Austria	95,850	102,256	6,406	6.7%
Denmark	68,000	68,000	0	0.0%
West Germany (former)	473,180	450,323	(22,857)	-4.8%
Italy	14,876	17,167	2,291	15.4%
Japan	995,266	1,012,348	17,082	1.7%
Netherlands	43,118	41,523	(1,595)	-3.7%
New Zealand	34,237	35,491	1,254	3.7%
Spain	231,894	296,597	64,703	27.9%
Sweden	108,000	110,900	2,900	2.7%
Turkey	339,192	375,863	36,671	10.8%
United States	2,168,298	2,398,000	229,702	10.6%

SOURCE: Organization for Economic Cooperation and Development (OECD), *Education Statistics, 1985-1992.*

[1]The number of teachers is in terms of full-time equivalent units.

Table S4. The legal school leaving-age for compulsory education: 1992

Country	Age (years)
Australia	15
Austria	15
Belgium	18
Canada	16
Denmark	16
Finland	16
France	16
West Germany (former)	18
Greece	15
Iceland	—
Ireland	15
Italy	14
Japan	15
Luxembourg	15
Netherlands	16
New Zealand	16
Norway	16
Portugal	14
Spain	16
Sweden	16
Switzerland	15
Turkey	15
United Kingdom	16
United States	17

—No information reported.

SOURCE: Organization of Economic Cooperation and Development (OECD), *Education at a Glance: OECD Indicators*, 1995.

GLOSSARY

GLOSSARY

Consumer price index for all urban consumers (CPI-U): This price index measures the average change in the cost of a fixed basket of goods and services purchased by consumers living in urban areas.

Early childhood education: Education preceding the first level (primary). It also is called pre-primary education. All types of establishments or group settings aimed at supporting and stimulating the child's social and intellectual development are included in early childhood education.

Educational attainment: The highest grade, year, or level of regular school attended and completed.

Educational expenditures: The sum of expenditures on instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, and awards, from restricted and unrestricted funds. (Note: Some of these expenditure categories do not apply to all levels of education.) Expenditures per student consist of total educational expenditures divided by the number of students.

Enrollment rate: The enrollment rate is the percentage of the population in a typical school-age cohort who are enrolled in full-time education. The typical age range for attendance in an education level may vary country by country.

Formal education: Formal education refers to education programs that are typically taking place in schools or other academic institutions with formal curriculums and educational requirements. Formal education usually leads to a publicly recognized academic credential, such as a graduation certificate, diploma, or degree.

Full-time-equivalent (FTE) enrollment: The sum of the enrollment of full-time students and the full-time equivalent of part-time students. Different conversion factors are sometimes used to convert enrollment of part-time students into full-time equivalents, depending upon education level. Conversion factors also may vary by country. For example, in some countries, two part-time students may be considered equal to one full-time student, while in other countries three part-time students may be considered equivalent to one full-time student.

Graduate degree: Any formal degree attained after the bachelor's degree. Graduate degrees include master's degrees, doctoral degrees, and professional degrees.

Gross domestic product (GDP): The gross domestic product (GDP) is equal to the total of all gross expenditures on the final use of domestically supplied goods and services, valued at the

price to the purchaser minus the imports of all goods and services. GDP per capita is the GDP of a country divided by its total population.

Higher education: Study beyond secondary school at an institution that offers programs leading to an associate, baccalaureate, or higher degree (or equivalent degrees in other countries). It also is called tertiary education.

Labor force: Persons age 15 to 64 years old either employed or actively seeking work.

Lower secondary education: Education equivalent to grades 7, 8, and 9 in the United States.

Organization for Economic Co-operation and Development (OECD): An organization of 26 nations whose purpose is to promote trade and economic growth in both member and non-member nations. OECD's activities cover almost all aspects of economic and social policy. The member countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

Primary education: Education prior to secondary education, equivalent to elementary education in the United States.

Private expenditures: Expenditures funded by private sources — mainly households, private non-profit institutions, and firms and business. Private expenditures include expenditures on school fees, materials such as textbooks and teaching equipment, transport to school (if organized by the school), meals (if provided by the school), boarding fees, and expenditures by employers for initial vocational training.

Private schools or institutions: Schools or institutions organized and controlled independently of public authorities, even though they may receive public funding.

Public expenditures: Expenditures funded by public authorities at all levels. Expenditures on education by public agencies other than education departments, ministries, or boards are included. Expenditures by education departments, ministries, or boards that are not directly related to education are generally not included.

Public schools or institutions: Schools or institutions organized and controlled by public authorities, normally providing open access without any distinction of race, sex, or religion.

Purchasing Power Parities (PPP): The rates of currency conversion that equalize the purchasing power of different currencies. This means that a given sum of money, when converted into different currencies at the PPP rates, will buy the same basket of goods and services in all countries.

Student-teacher ratio: The ratio of the full-time-equivalent enrollment in a given level of education to the total full-time-equivalent teachers working at the same education level.

Teachers: A teacher is defined as a person whose professional activities involve the transmitting of knowledge, attitudes, and skills that are stipulated in a formal curriculum program to students enrolled in a formal educational institution.

This definition does not depend upon the qualifications held by the teacher, as it is based upon three concepts: activity (thus excluding former teachers who no longer have active teaching duties); profession (thus excluding people who work occasionally or in a voluntary capacity in schools); and formal program or curriculum (thus excluding people who provide services other than formal instruction, e.g., supervisors, activity organizers, etc., whether the program is established at the country, district, or school level).

Tertiary education: See "Higher education."

Unemployment rate: The percentage of the labor force without work, but actively seeking work.

Upper secondary education: Education equivalent to grades 10, 11, and 12 in the United States. Upper secondary education may include general, technical, or vocational education.

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